



Scraping down the mast

Getting in
some of the
fine work

APRIL, 1916

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April, 1916

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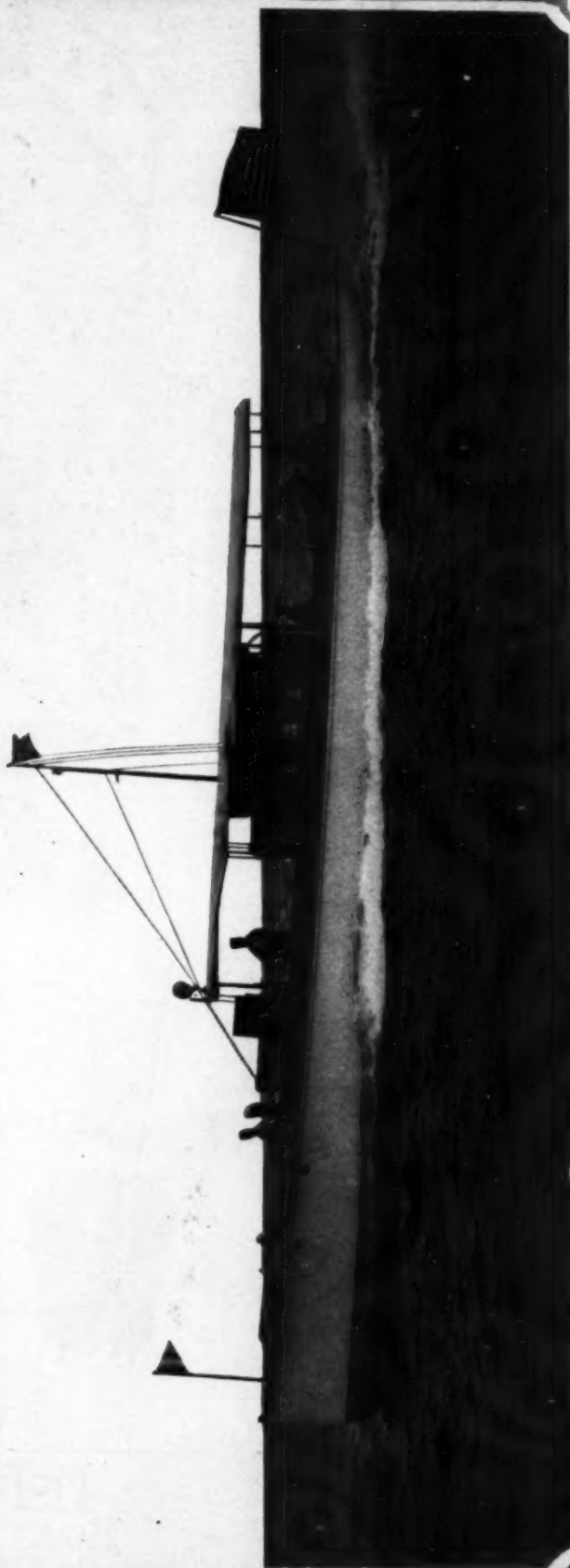
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MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING

*Putting the Boat
into Commission*

By F. W. Horenburger

Official Measurer, New York Motor Boat Club

AMONG the most important tasks ahead of us when we start to prepare our boats for another season's usefulness and pleasure are those pertaining to the painting and varnishing. Aside from adding to the appearance and attractiveness of our boat the paint acts as a preservative of the wooden structure, protecting it from the effects of the weather and sea. To some it may seem that paint is paint and all that is necessary is to get something on the boat, no matter what or how. Of equal importance for this work, however, are the quality of the materials used, the care and good workmanship spent in the application, the proper preparation of the boat before painting and also the weather conditions during painting.

The work contemplated should be well planned in advance. All the various jobs should be itemized and listed so that the necessary materials can be assembled in ample time to prevent delay on account of lack of material or tools. Those of us who use our Saturdays and Sundays for this work should be particularly careful in doing away with all causes for delay. It takes but a few weeks for the weather to become pleasant enough to launch the boat, and time lost will be regretted when we see the other fellow go overboard all ready for business. It is also advisable to separate the work into rainy-day and fair-weather jobs. On cloudy or rainy days the time can be employed in such tasks as burning off old paint, cleaning down the hull, washing and cleaning out the bilge or cleaning down the interior paints and varnish. The painting and varnishing of decks, bottom, topsides and interiors must be attended to during fair weather.

Painting should not be undertaken on cloudy or damp days nor should paints be applied on any but absolutely dry

In spring the motor boatman's fancy lightly turns to thoughts of fitting out, and Sundays and half holidays are spent in furnishing up the boat to its pristine state. The job of putting a boat into commission is one which should be done with care, for on the degree of excellence of this proceeding depends the beauty and the comfort of the craft for the ensuing season. The work should be so planned that vagaries of the weather will not interfere with it, labor with the scraper or the kit of tools being done on rainy days, and with the brush on such days as the sun condescends to shine—for once the ice is out of the water time passes with amazing swiftness. In the accompanying article Mr. Horenburger gives many valuable suggestions for mapping out the work

surfaces. The interior of the boat in particular should be thoroughly dried out and aired before anything is done to it. This does not mean that the painting should be delayed until the hot weather

comes, for then the heat will open up seams and cause other trouble. The best time for painting is generally considered to be between 10 and 4 o'clock on a bright, spring day with the temperature above 60 degrees.

The materials used for properly painting a boat are an assortment of brushes from one inch to three and one-half inches in size, a putty knife, a cabinet scraper for brightwork, a gasoline torch if any old paint is to be burned off, some sandpaper blocks (cork is best), assorted sandpaper, white lead putty and the necessary paints, varnishes and varnish removers.

Since any number of reliable paint manufacturers make a specialty of preparing mixed paints particularly adapted for marine use, it is hardly advisable for any one to attempt to mix his own paint and expect to get as good results. All ready-mixed paints should be thoroughly stirred after the can has been opened. Generally the pigment will be found in the bottom of the can, and it must be thoroughly incorporated with the oils before the paint can be used. Red lead is frequently used for a priming paint for bottoms and bilge. It is a heavy orange pigment and is prepared with linseed oil in the proportion of about eight pounds to the quart. It must be freshly used, as otherwise it forms combinations with the oil and becomes hard and unfit for use. It acts very much like plaster of Paris when mixed with water. It possesses excellent preservative qualities when used as a priming coat.

Volatile oils, such as benzine, gasoline or other petroleum or paraffin compounds can be used to dilute paints. Linseed oil which is a product of flaxseed is used for mixing paints. It is valuable on account of its ability to dry into a hard resinous body, holding the paint in a firm water-proof varnish. Turpentine, which mixes freely with paints, is used to thin them down to any desired degree. Driers are added so that the paint will dry speedily after application and before it becomes dusty or is rubbed by accident.

Brushes should be properly cleaned after each use in gasoline or benzine, and thus they will always be ready for service. It is not essential to keep an assortment of brushes for each

separate class of work as some men do; the same brushes can be used on white work, copper bottom paint and then

Start in with the upper work and paint down so that rain will not carry dirt or stains down on clean paint from unfinished upper surfaces


Dents and scratches in the wood should be filled up with putty and such seams as need it should be thoroughly caulked before the paint cans are opened

on varnish without any trouble provided they are well cleaned each time. Brushes in which the bristles are set in vulcanized rubber are probably superior to the other types, as enamels or varnishes have a tendency to pull all loose bristles out of the brush.

White lead putty is used for filling up dents, scratches, nail holes, etc. These should receive a coat of priming paint before the putty is applied, as it will then hold much better. The undercoat or priming coat should not be of an inferior quality. The idea that a high-grade paint will cover it anyway may sound plausible, but it does not work out like that in practice. It is more than likely that the inferior priming paint will peel off and with it will come the high-grade finish paint.

Scrape off the old varnish or apply a varnish remover before putting on the new coats






The best method for going about the painting on the outside of a boat is to start with the decks and work down so that rain will not carry dirt or stains down on clean work from unfinished upper works. Also it is well first to clean out the bilge, engine, scour out lockers, galley, icebox, etc., so that all dirty work is finished and out of the way before any new work is started.

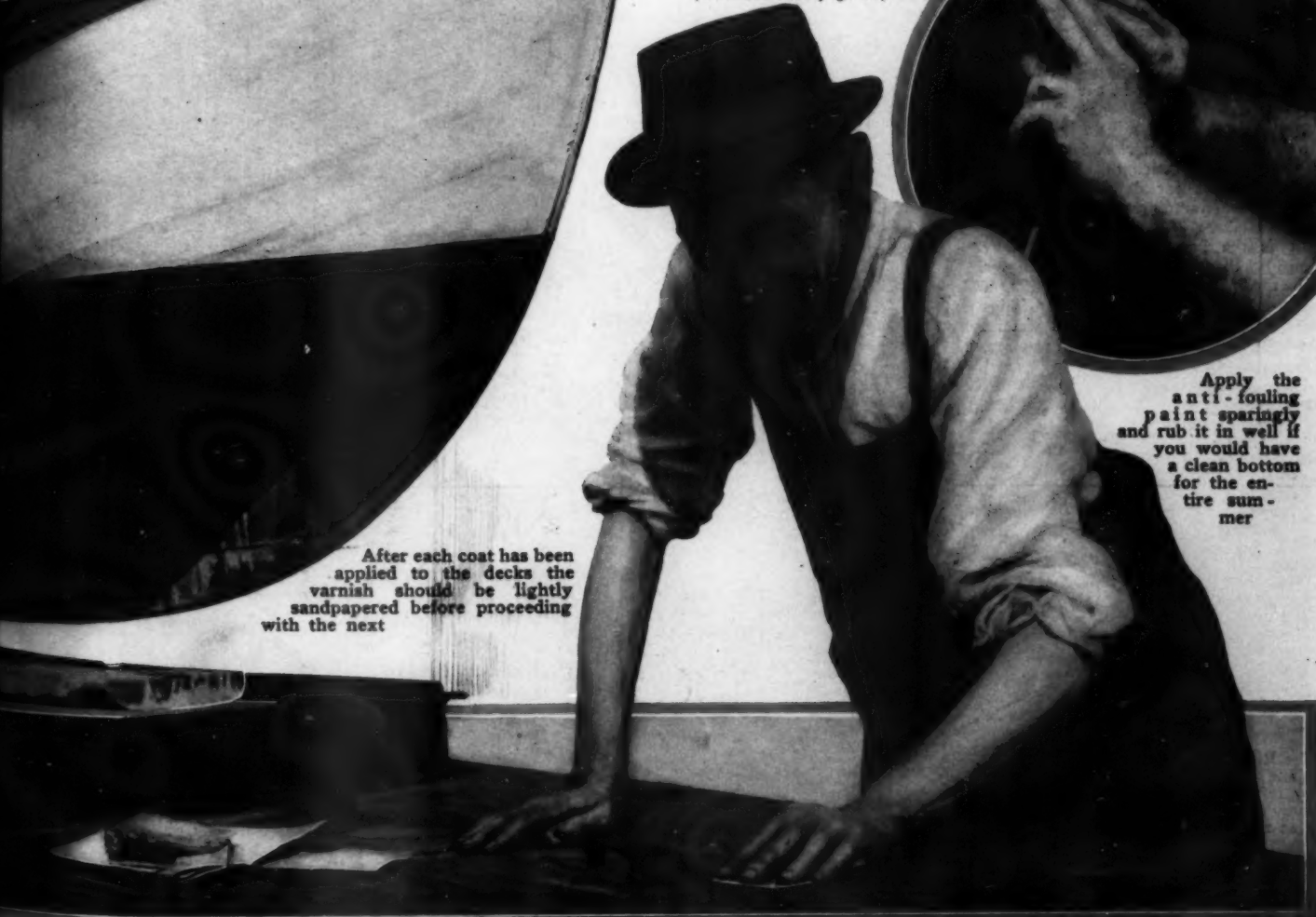
Taking up now in detail the various portions of the boat and the methods of treating each, we have first, decks: Should yours be a canvas deck and in need of a new cover, soak the new canvas in water and apply it wet, tacking it closely all around the edges and stretching it well. The deck should be painted first, and after the canvas has dried it should be given several coats of a good deck paint. The first ones should be thinned with turpentine and the deck should be sandpapered before the final coat is applied in its normal strength. For old canvas decks two coats of new paint will be enough, the first coat being thinned and the second normal as before.

For white pine and varnished decks it is generally necessary to scrape and bleach them. The scraping should be carefully done with a sharp cabinet scraper to avoid scratches on the surface. Or the old varnish can be removed with some of the chemical paint and varnish removers which do this work very effectively. After the last trace of old varnish has been removed the bleaching can be accomplished by applying a saturated solution of oxalic acid to the wood which will remove all weather stains, etc. After this bleaching the surface must be washed down with a solution of vinegar and water so as to neutralize the oxalic acid, and then washed with clear fresh water. The open seams and joints are caulked and filled with white lead, putty or one of the prepared seam compositions. Sandpaper is used to smooth down and then the new varnish should be used, allowing ample time between coats for proper hardening. It also should be lightly sandpapered with fine sandpaper between each two coats. It is well to remember that two thin coats of varnish will do more good than one heavy coat. After the decks have been completed they should be protected from heels with nails in them, engine parts, tools, etc. Decks that do not require scraping should be thoroughly cut down with fine sandpaper or steel wool and then carefully dusted. The varnish may now be applied and should a second coat be necessary, cut the gloss slightly after it is thoroughly hard, dust as before and apply


(Continued on page 55)



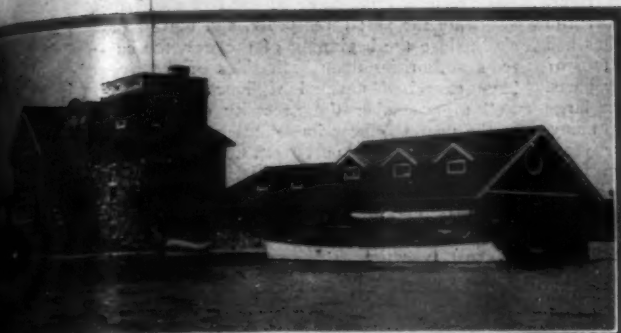
No little skill is required to get a fair and true water line



After each coat has been applied to the decks the varnish should be lightly sandpapered before proceeding with the next

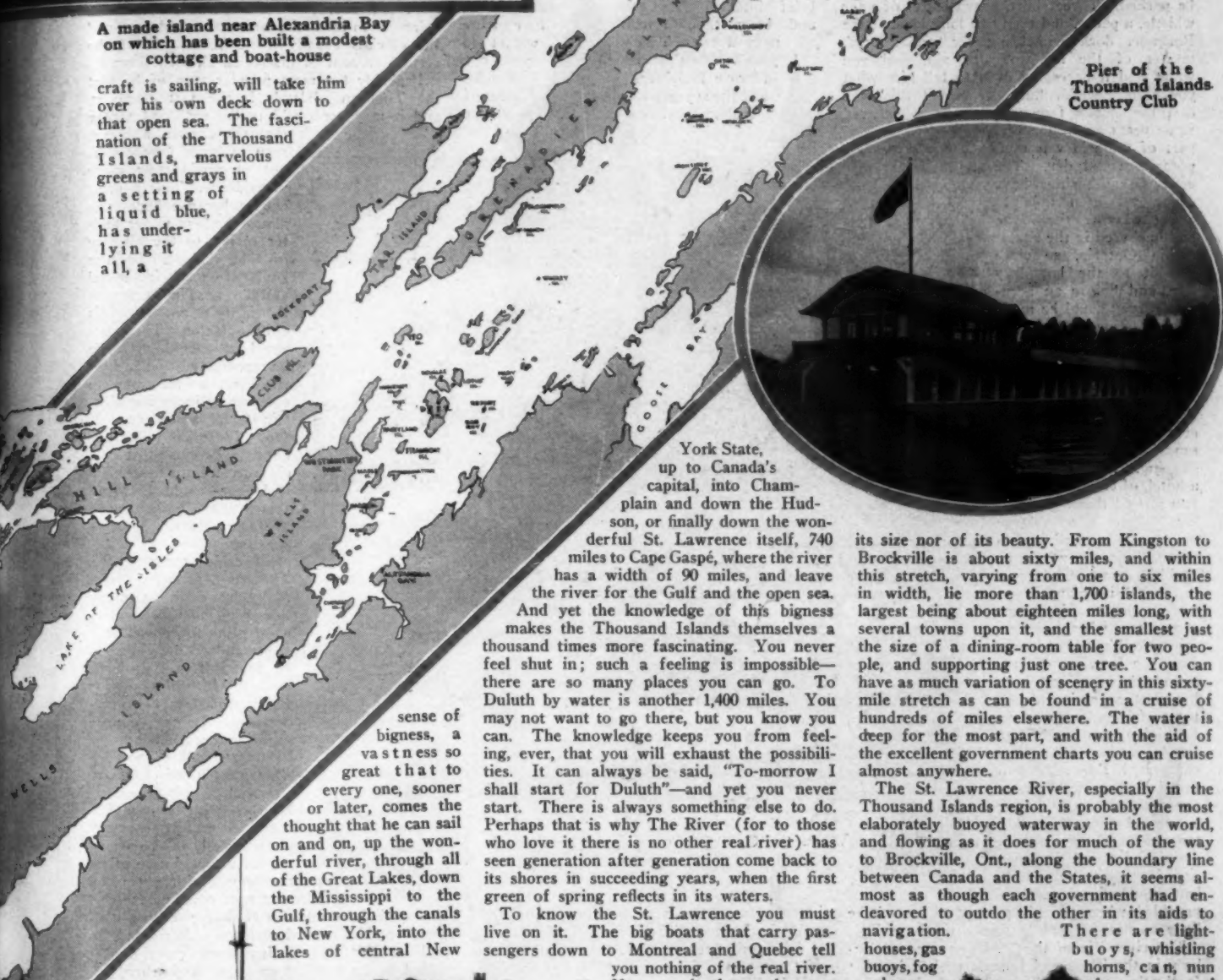


Apply the anti-fouling paint sparingly and rub it in well if you would have a clean bottom for the entire summer



A made island near Alexandria Bay on which has been built a modest cottage and boat-house

craft is sailing, will take him over his own deck down to that open sea. The fascination of the Thousand Islands, marvelous greens and grays in a setting of liquid blue, has underlying it all, a



Pier of the Thousand Islands Country Club

York State, up to Canada's capital, into Champlain and down the Hudson, or finally down the wonderful St. Lawrence itself, 740 miles to Cape Gaspé, where the river has a width of 90 miles, and leave the river for the Gulf and the open sea.

And yet the knowledge of this bigness makes the Thousand Islands themselves a thousand times more fascinating. You never feel shut in; such a feeling is impossible—there are so many places you can go. To Duluth by water is another 1,400 miles. You may not want to go there, but you know you can. The knowledge keeps you from feeling, ever, that you will exhaust the possibilities. It can always be said, "To-morrow I shall start for Duluth"—and yet you never start. There is always something else to do. Perhaps that is why The River (for to those who love it there is no other real river) has seen generation after generation come back to its shores in succeeding years, when the first green of spring reflects in its waters.

sense of bigness, a vastness so great that to every one, sooner or later, comes the thought that he can sail on and on, up the wonderful river, through all of the Great Lakes, down the Mississippi to the Gulf, through the canals to New York, into the lakes of central New

To know the St. Lawrence you must live on it. The big boats that carry passengers down to Montreal and Quebec tell you nothing of the real river. You see it then only as a highway of commerce and you get an idea neither of

its size nor of its beauty. From Kingston to Brockville is about sixty miles, and within this stretch, varying from one to six miles in width, lie more than 1,700 islands, the largest being about eighteen miles long, with several towns upon it, and the smallest just the size of a dining-room table for two people, and supporting just one tree. You can have as much variation of scenery in this sixty-mile stretch as can be found in a cruise of hundreds of miles elsewhere. The water is deep for the most part, and with the aid of the excellent government charts you can cruise almost anywhere.

The St. Lawrence River, especially in the Thousand Islands region, is probably the most elaborately buoyed waterway in the world, and flowing as it does for much of the way to Brockville, Ont., along the boundary line between Canada and the States, it seems almost as though each government had endeavored to outdo the other in its aids to navigation.

There are light-houses, gas buoys, fog buoys, and spar range

buoys, whistling horns, can, nun buoys, and lights along



One of the cottages and boat-houses on the St. Lawrence. The absence of any rise or fall of tide makes it possible to build sea-walls with deep water everywhere

both the American and Canadian channels, and there is no reason for the navigator to be lost or to run into trouble. Off the main channel the private owners have buoyed dangerous reefs and shoal places, and as floating debris of any kind is practically unknown, the stranger can cruise with a free mind.

Supplies of all kinds may be purchased almost anywhere, as there are many ports along the islands—Kingston, Clayton, Gananoque, Thousand Island Park, Alexandria Bay, Rockport and a dozen others. Some of these are towns of considerable size, while others, particularly Rockport, which is in the province of Ontario, are notable chiefly for the extraordinary skill with which the ice locker can be packed. Three short, sharp blasts of your whistle, a pause, and then one long blast at the Rockport dock will bring the genial Fred, master of the inn, to your aid, and you won't find it necessary even to tell him what you want. Incidentally, it was at this port that the locally famous barge was anchored some years ago when that part of Ontario was temporarily voted dry. The excise authorities have never yet been able to prove whether the barge had anchored in the States or in Ontario, so close was it to the boundary line, and before an accurate survey could be made to determine, the anchor by great good fortune had dragged and the question was never settled.

You can cruise among the Thousand Islands, even if your boat is too small for comfortable sleeping. You can sleep at a hotel, of course, but then you can do that anywhere. Take along a tent, large or small, according to your desires and your facilities, and while you can't pitch it on any island you happen to like, there are plenty where anyone can make himself at home. Both the Province of Ontario and New York State have set apart islands or parts of islands, known as Dominion Lands and State Lands, respectively, where campers, if they adhere to certain very fair rules, are welcome to stay for a period not exceeding two weeks at any one time. Good docking facilities are furnished and excellent stone fireplaces are provided, where even the poorest cook can have little excuse for not getting a good meal.

The river life of the St. Lawrence, particularly in the Thousand Islands region, is most fascinating. When it is realized that there are owned and operated, say from April to the end of November, upon a forty-mile stretch of river with Alexandria Bay as its social center, approximately six thousand motor boats of all types and sizes, to say nothing of private yachts and passenger and freight boats, an idea of the river activity can be gained. There is no tide, only a very moderate current in the main channels, and none noticeable elsewhere, and the water is so clear that you can see bottom at forty feet, and is the best you can ask for drinking purposes.

The freight traffic of the river has been furthered by the Canadian government, as the St. Lawrence route is the shortest from the Canadian grain fields to Europe, and some of the vessels, especially since the recent enlargement of the canals, can make the ocean voyage without reloading. This accounts for the remarkably buoyed channels upon both the

American and Canadian sides of the river.

Freight boats carrying ore, coal, lumber and grain are continually passing, and this has had much to do in fact with the passing, too, of a familiar character of one of the river ports.

Two brothers, the sons of one of our large city's prominent families, well known to many, if their names be told, had lived for years upon one of the islands to keep them from the temptations of their home city. They could always be seen together, always one with a spy-glass, and always one gazing through it, up or down the river. "All right, time to go to Jake's" from the one with the spy-glass would mean the telescoping of the instrument, the departure of the two for a brief interval from the water front, and later their return for the next watch. They went to Jake's when there were three freighters and the spy-glass was of material assistance.

few are used upon some of the larger islands.

Within the past three years, and more especially since the beginning of the war, the customs authorities upon both sides of the river have exercised unusual vigilance, and it is well to remember the necessity of reporting to the nearest officer immediately upon touching at an American port from Canadian waters or vice versa. Neglect of this important duty may result in the seizure of your boat for an indefinite period; several who have unwittingly violated this very stringent rule have had a short vacation seriously interfered with through inability to withdraw their boats from the hands of the law. It must be said, however, that the authorities upon both sides of the line endeavor so far as possible to act with fairness toward the summer residents, and the officials usually make liberal use of the certain amount of discretion allowed them.

Probably the most popular type of boat at the Thousand Islands is the fast runabout, and it may seem odd to the seaboard visitor

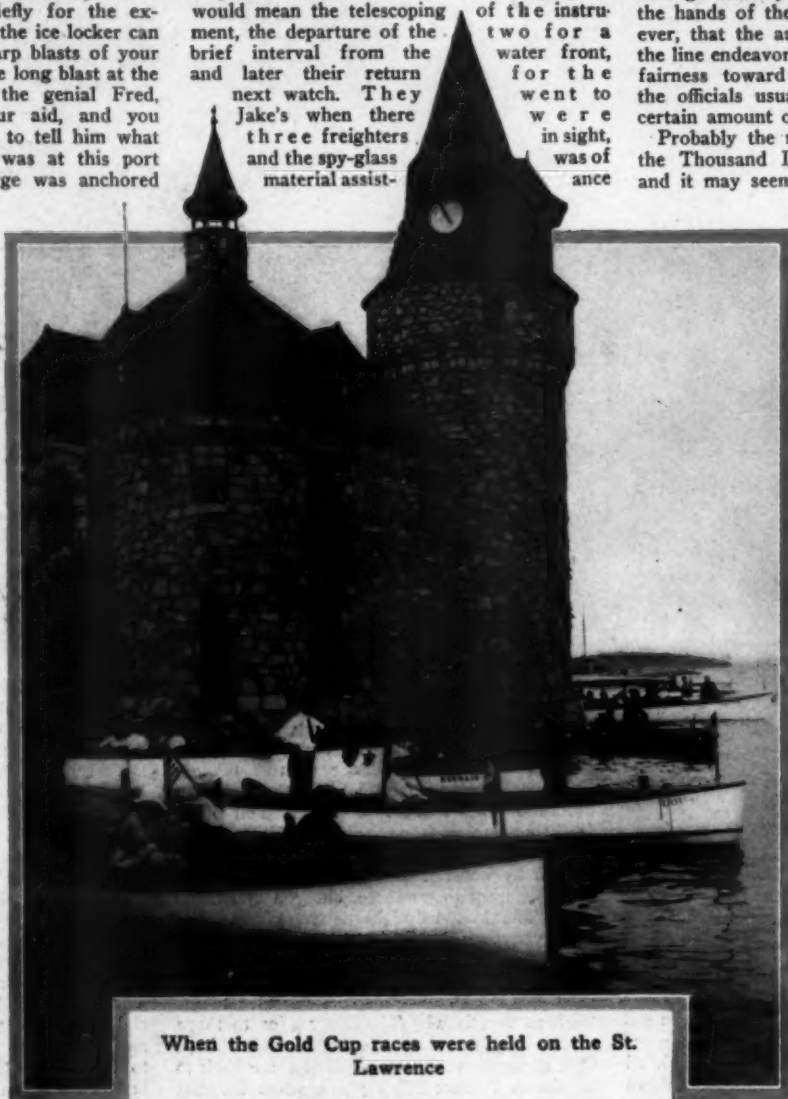
that the cruiser, although seen in large numbers, is not proportionately more in evidence. This is principally because boats can always be kept under shelter owing to the absence of tide, and also because boats are used for social and business calls among the islands, and speed is quite a factor. The average boat would probably be represented by a 28-foot runabout, with complete equipment, including electric starter, and a speed of from 18 to 28 miles per hour. The class that is a close second for favoritism is longer—about 36 to 45 feet over-all, with a speed averaging close to 36 miles per hour.

So cruising among the Thousand Islands can really be done in other than cruising boats. It is comforting to know that a sheltered spot may always be found if you want to anchor for the night. Many times have cruises of several days' and nights' duration been made in a boat that could by no possible stretch of the imagination be called a cruiser, with the nights spent in perfect comfort aboard the boat. This boat was of a type not so often seen now, with a permanent roof covering the entire

cockpit, space forward for chairs, the motor amidships and seats on either side aft, and at the stern. Ingenious contrivances added to the comfort on board, and when the side curtains were rolled down, a sound night's sleep always followed.

There should be made two hard and fast rules for cruising in these waters—first, cruise leisurely; and second, always have with you either aboard or trailing astern at the end of a tow line, a canoe for every two people. If you fail to do this, you miss some of the most enchanting spots the river has to offer; a paddle perhaps of several miles up a narrow and winding channel that could not be seen had you not located it upon your chart and determined to explore it to its end; a climb up steep cliffs at the source of the stream, too, will usually give you a view you will never forget, where away down at your feet, looking like a toy ship in a miniature Japanese garden, lies your own craft at anchor. It is such views as these that make the canoes so worth while a part of the equipment, and that

(Continued on page 58)



When the Gold Cup races were held on the St. Lawrence

because sometimes as many as six or eight could be located. The increasing river traffic and its consequences caused the death of one of these two a year ago.

It is difficult for one not a frequent visitor to the islands to realize the absolute necessity of the motor boat to the summer population. It is more necessary by far than the automobile on land and it is used proportionately in even greater numbers. In one private boat-house at a small island near Alexandria Bay a caller one afternoon counted twenty-six motor boats in commission, and the family of the owner was not at home, being off on a short cruise with some friends and taking three boats with them. Automobiles can be seen at any of the towns along the river, of course, but they usually do not come near the water, and when a visitor has been at the islands for a few days, a motor car seems as much out of place as do those motor boats of various sizes that you see being hauled on trucks through the New York streets at show time. Occasionally an automobile is seen being ferried across the river by motor barge, and a

When the MOTOR Needs Attention

By W. G. Randolph

SPRING is here and with it comes the call of the waters. The fortunate owner of a motor boat must needs bestir himself and get his craft in tip-top condition. Even if there is much to be done on the hull, the motor must not be forgotten. To most motor boatmen the annual overhauling of the engine is a real pleasure, and not a lesser one than the runs that are to follow later in the year. In many cases, especially if the motor is nearly new, repairs may be unnecessary except perhaps to give it a coat of paint. Others, through hard use or neglect during the winter, may be in poor condition and need a thorough overhauling.

What should be done depends greatly on how the motor acted on the last few runs of the season. An experienced man could tell by listening to a motor just which bearing was causing that little pound but as a rule this is beyond the range of an amateur. An examination should be made and one should determine just what repairs and adjustments are required. As a preliminary to this, it is a good plan to clean the outside of the motor of any grease that was put on to protect it and after so doing it will be found to be a much pleasanter proposition to work around. Many of the things that will be mentioned could have been done much better in the fall. We should start at the top and give the machine a good looking over. By removing a spark plug or valve cap the walls of the combustion chamber can be examined. If there is much carbon or if the motor kept on running after pulling the switch at the end of last season it had best be removed. It can be assumed if the motor is of the four-cycle type and of high speed that the valves need grinding. In fact, it is a good idea to grind valves once a year whether they seem to need it or not. The compression should be tested by turning the motor over and noting the resistance. If it is weak and not due to leaky valves, the only sure way to remedy it is to dismantle the motor and see whether the piston rings are worn or stuck in their grooves. Even though it might be possible to loosen sticking piston rings by treating the cylinder with a dose of kerosene, the effect would not last long, and we should soon find them stuck again. In any case if there is no reason to suspect loss of compression past the piston there is no reason to remove the cylinder. If the engine is a multi-cylinder one and it is necessary to remove carbon, this is most easily and conveniently done by burning it out with oxygen.

The oxygen process is a perfectly practical method and does the trick at small expense, saving a great deal of unnecessary work. Many garages have complete oxygen outfits and charge on an average 75 cents per cylinder for doing the work. If one prefers to be his own mechanic an oxygen tank, some rubber tubing, and a short piece of copper or brass tubing is needed. A tank of compressed oxygen is obtainable at drug stores, but it will be found advisable to shop around, as the price asked varies considerably. To burn the carbon out, the tank is connected by the rubber to the

metal tube which is to form the nozzle. The hole in the end of the tube should be very small and might be obtained by simply hammering the end till it was nearly closed, or the nozzle might be made in some more workmanlike way. The cylinder to be treated is brought up to the firing point and then one end of a lighted taper is placed in the combustion chamber through a valve cap or spark plug hole, all other openings being closed. The nozzle is pointed at the taper in the cylinder and the valve on the tank slightly opened. The pure oxygen playing on the taper will cause it to burn vigorously, and immediately, with a roaring sound, the carbon in the cylinder will begin to burn. Remove the taper and see that the oxygen is flowing fast enough to keep up a vigorous combustion. Play the oxygen on different parts of the cylinder so that no place will be overheated. Repair men using this method usually spray some oil on the walls when the carbon seems to be burnt out. They then start the combustion once more and burn up this oil together with any remaining particles of carbon.

oxygen process but would remove the cylinder. Likewise if the motor has a removable head we would remove the carbon after removing the head. Little trouble is experienced with the clogging of water jackets; nevertheless if you ran aground ever last year, you would better take a look at the water jacket and see if it contains any sediment. Examine also the hose inlet and outlet water connections, remembering that while they are the proper thing to

One of the first things to test in looking over the motor is the compression in the cylinders. This is done by turning the motor over and noting the resistance. If it is weak and (in a four-cycle motor) is not due to valves, the only sure way to remedy it is to dismantle the motor and see whether the rings are weak or stuck in their grooves. It is also a good plan to look in the water jacket for any accumulation of sediment

use, they must be replaced at intervals. Some very annoying cases of overheating have been caused by the inside layer of rubber in the pipe coming loose and closing the en-

Of course, if the motor is a small one with one or two cylinders, we would not use the

tire passage. Also the inlet pipe hose, being under a suction, may collapse after it has become worn





One of the important duties is the removal of carbon should there be any present in the combustion chambers. In small motors with detachable heads this is most readily effected by removing the head, but the accompanying article explains how the amateur can burn out the carbon in multi-cylinder motors by the oxygen process.

if the type of engine requires, it should be refilled. In the base of an engine you will generally find a gritty mess. It will pay to investigate this sediment, as something of interest might be found. It is easily done

by placing the sediment and any lumps on a piece of metal and pouring a little gasoline on it. This will remove the oil and what remains may be identified as particles of the bearing metal, pieces of melted babbitt showing bearing trouble somewhere, or what is equally likely pieces of carbon. They may be of considerable size, a dull black, and can be flattened and crumbled by pressure. These large particles in the base generally accompany a heavy carbon deposit in the cylinder and it will be found that the under side of the piston is as heavily coated as the top. The base of a two-cycle engine, being cooled by the incoming charge, would be much less likely to have carbonization on the under side of the piston head.

When we are in possession of the facts,

and leave the motor without water.

The inspection of the upper part of the engine being completed, we should turn to the crankcase and examine it and its working parts. If the engine is of the two-cycle type it is understood that the base must be air-tight to give crankcase compression. Now is the time to look for leaky gaskets. Examine the bearings both from the handhole in the crankcase and from the outside. Put a lever under the shaft and see if there is any play. Some indication of whether the end bearings of a two-cycle machine are worn may be gained by examining the ring of grease that has worked out at the end. If it appears aerated or full of holes you

out that the crankcase should be cleaned of old oil, and,

After all the dirty work has been done on your motor it should be rubbed clean of grease and grit with gasoline and then painted with one of the engine enamels which can be purchased in any supply store. The castings will probably be smooth enough so that no iron filler will be required, and two coats of enamel should be sufficient.

Don't get the idea that you must take your motor entirely to pieces. Test out the various parts for wear before commencing a wholesale dismantling.



may be sure that the bearings are loose and that the mixture has been escaping. The big end connecting rod bearing wears faster than any other and it is the easiest one in which to detect lost motion. This is done by grasping hold of the connecting rod through the handhole and trying to lift it up and down. This will tend to squeeze the oil out of the bearing with a sucking sound. If the sucking sound is absent you may assume that the bearing is O. K. In a heavy machine it would be better to substitute a pry instead of using the hands to test the bearing for tightness.

On the suction stroke in a four-cycle engine there is an upward pull on the connecting rod which is absent in a two-cycle motor. Hence in a four-cycle the pressure of the connecting rod on the crankshaft is alternately taken on the cap and the other half of the bearing, and if there is any play this reversal of stress will cause a pound. This is the reason why four-cycle connecting rods must be kept tight.

It might be well to point

and know just about what must be done to the vital parts of the engine, we can determine how to go about remedying the trouble. Each one must decide whether he is capable of doing whatever may be necessary himself or whether an expert must be called in. In the two-cycle field a looseness in the main bearings often shows either that new bearings must be had from the factory or else that the bearing must be rebabbitted at a machine shop. If you have found the bearings loose, by all means get them fixed, even though they have not given any trouble by pounding. Loose bearings mean loss of base compression and this means hard starting and irregular running. In a four-cycle engine, as the base is not tight, the bearings are practically always of the split type and are adjustable by removing the bearing cap and taking out a shim. Often it may seem advisable to use a thinner shim than is ordinarily supplied. In this case a paper one

(Continued on page 55)

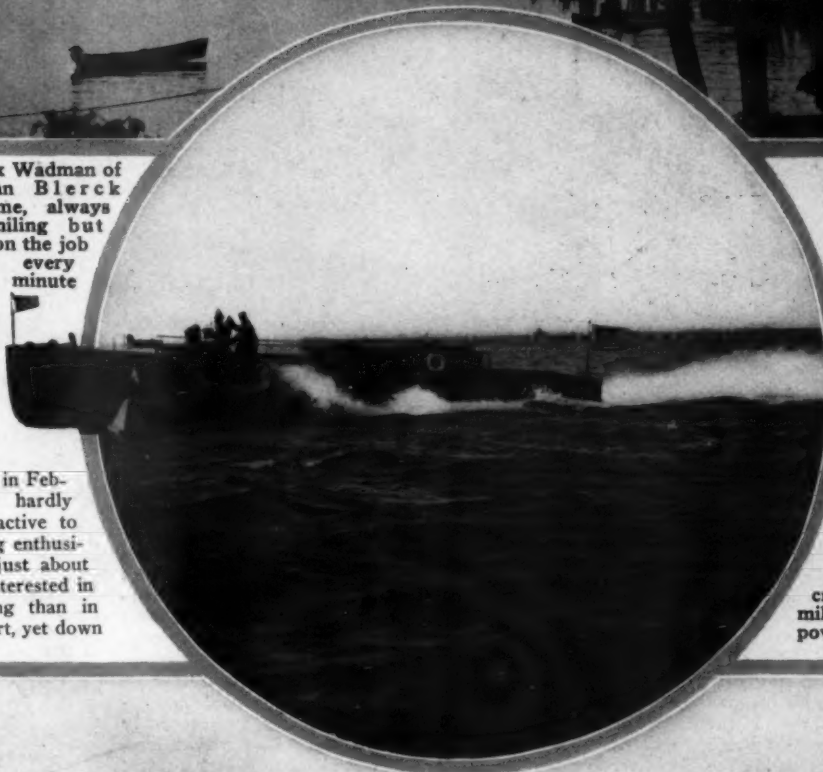
ESTABLISHING TWO NEW WORLD'S RECORDS



After seeing what has taken place on our Biscayne Bay race course during the past three days, I do not hesitate to say or believe that eventually ours will be the biggest racing event in the United States. Next year we will offer \$8000 for the express cruisers and I have already had assurances that at least ten boats of this type will start. *Statement made by Carl G. Fisher immediately after the recent races at Miami, Fla.*



Rex Wadman of Van Blerck fame, always smiling but on the job every minute



Some of the fleet anchored off the Biscayne Bay Yacht Club at Miami, Fla.

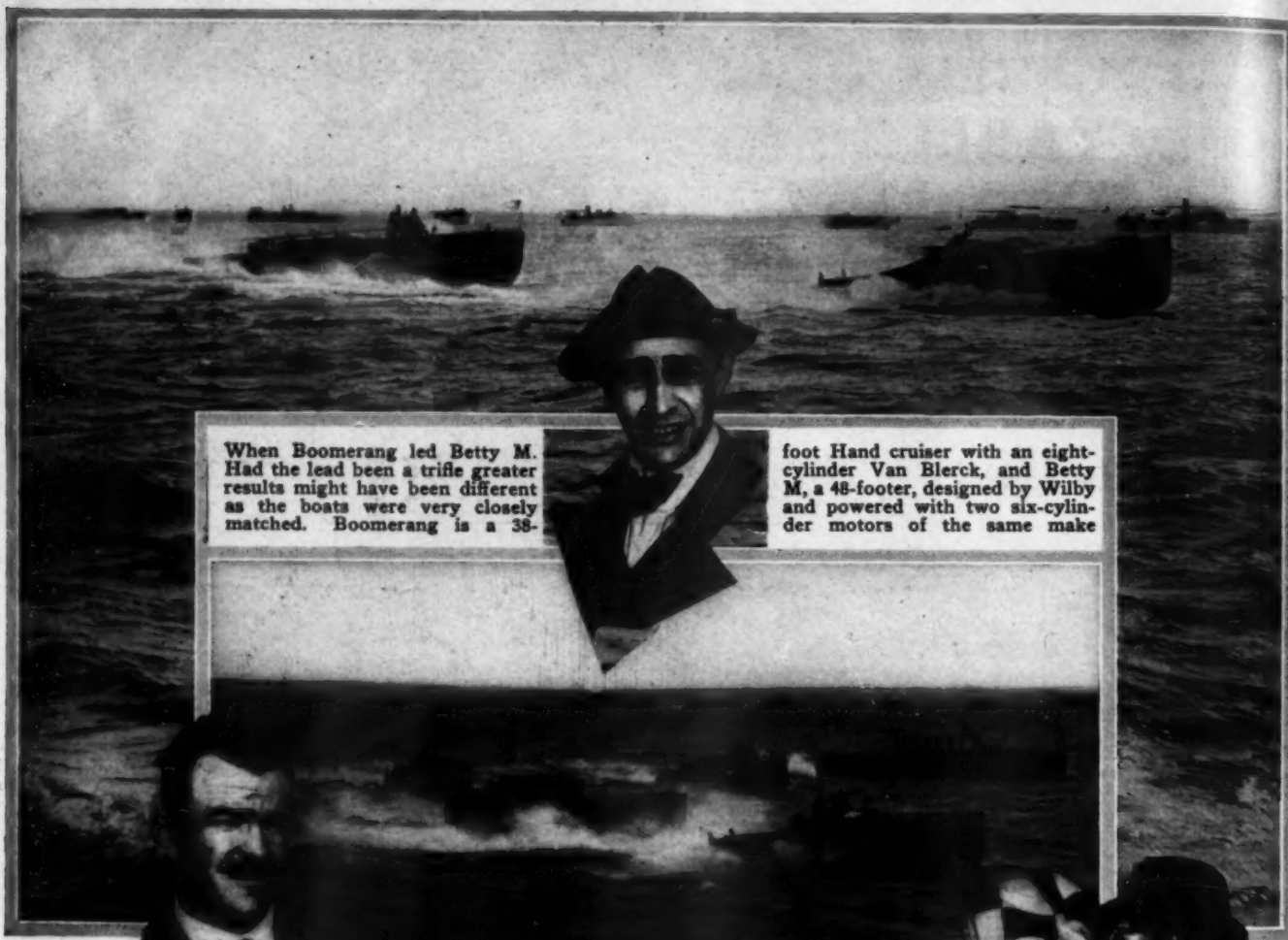
on Biscayne Bay—on the lower east coast of Florida, off the city of Miami, which only a very few years ago was not even a village—conditions are vastly different. It is there that motor boat racing in February is a glorious pastime. In the sunshine—sunshine so invigorating

Betty M, the new express cruiser champion; speed 24.369 miles per hour; length 48 feet; power two 100 h.p. Van Blercks

MOTOR boating in February—this hardly sounds attractive to the majority of boating enthusiasts, most of whom just about this time were more interested in snow-shoeing or skiing than in any form of water sport, yet down



Carl Fisher's Wizard leading Albany at the first turn on the last day. Wizard is a Hand designed, Sterling powered craft



When Boomerang led Betty M. Had the lead been a trifle greater results might have been different as the boats were very closely matched. Boomerang is a 38-

foot Hand cruiser with an eight-cylinder Van Blerck, and Betty M, a 48-footer, designed by Wilby and powered with two six-cylinder motors of the same make

E. C. J. McShane, one of the Northern enthusiasts who journeyed to Miami and helped make the regatta a success

The start of the express cruiser class on the first day was a thriller. An idea of the condition of the sea and the speed of the boats may be had by noting the amount of spray flying

and warm that the crews are at their stations in their shirt sleeves, where spray from the tropical waters kicked up by half a gale of wind from the westward, comes aboard only to add another stimulus to the whole scene, and a great body of excited spectators is banked along the home-stretch of the race course, all in summer attire and with features tanned to an almost unbelievable hue by Miami's sun and that kind of outdoor living which Miami promotes. Anchored within the 2½-mile oval course are perhaps a thousand, perhaps more, motor yachts and motor boats of every kind. Craft from all parts of the navigable waterways of our country—motor boats which we recognize as old friends from Long Island Sound, others which in a few

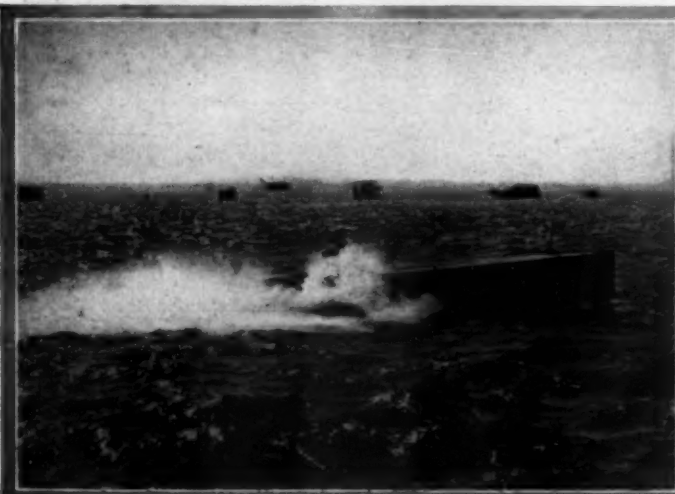
months will be somewhere down off Maine's rockbound coast, others from the Great Lakes; in fact, it seems as though every craft worth while from anywhere is at Miami, claiming title to its share of that sunshine and winter environments which is bound to make Biscayne Bay and Miami even more popular in the future than it is today.

Such was the glorious setting to the motor boat races which the energy of Carl G. Fisher made possible for a second time. More is in store next year, and the city of Miami should feel proud not only of Mr. Fisher but of the 1916 motor boat races themselves. To hang up two world's records in their second attempt is no small feat in itself, and this accomplished, too, without the sign

of a protest or without a single contestant or spectator dissatisfied that he did not receive fair treatment and a full value for every dollar expended.

(Continued on page 60)

Starter James C. Nichols, vice-president of the Sheepshead Bay Speedway



Albany, winner of the class for open displacement boats. She is a Hacker design with a six-cylinder Van Blerck



Vibora, owned by James Deering. This boat is a Hickman Sea Sled powered with two four-cylinder Sturtevant motors

Caprice, a Fast

The V-Bottom Cruiser Which Won Her First Race Last Summer, Establishing a Record

40-Footer

Entry in the Record Trophy for the Course

Photographs by Pearce



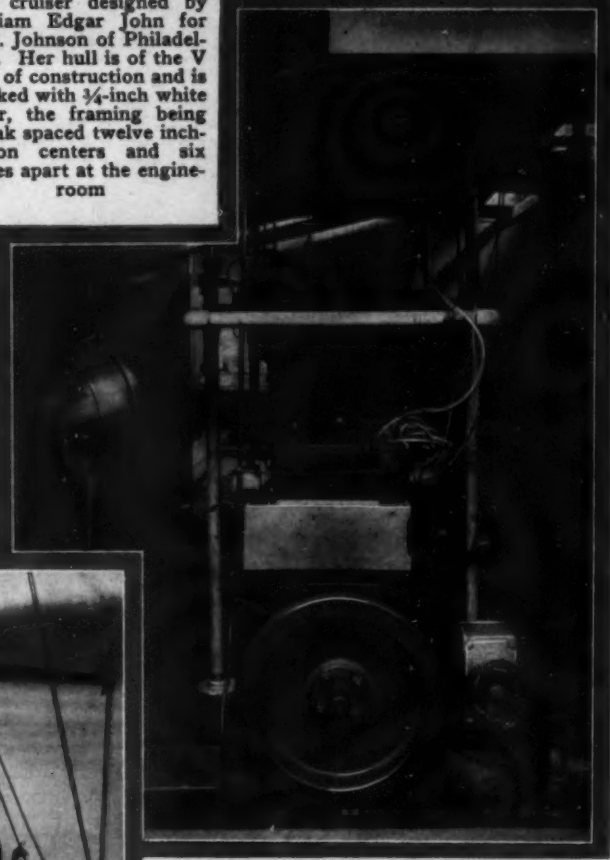
Caprice is a noteworthy 40-foot cruiser designed by William Edgar John for E. C. Johnson of Philadelphia. Her hull is of the V type of construction and is planked with $\frac{3}{4}$ -inch white cedar, the framing being of oak spaced twelve inches on centers and six inches apart at the engine-room

A HANDSOME 40-foot cruiser, which made good in her first race entry and which has given her owner satisfaction ever since, is Caprice, shown in the accompanying illustrations. Shortly after her launching in July of last year she was entered in the Record Trophy Race, from Essington to Ship John Light on the Delaware river, a distance of eighty-four nautical miles, and came in a winner in the fastest time made in the history of this popular race. Caprice was designed by William Edgar John, and built by the Norristown Marine Construction Co., of Norristown, Pa., for E. C. Johnson of Philadelphia.

She is 40 feet in overall length by an extreme beam of 10 feet 2 inches and a draft of 3 feet 6 inches. She is of the V-bottom type and, powered with a six-cylinder Van Blerck motor swinging a 26 x 26-inch Ailsa Craig Columbian propeller, she maintains a cruising speed of about 15 miles per hour.

Her hull is of substantial construction, the frame being composed of oak ribs spaced twelve inches apart, except in the engine-room, where they are spaced six inches apart, and the planking is of $\frac{3}{4}$ -inch white cedar; hackmatack knees are used.

The general arrangement below decks comprises a chain locker and toilet in bow, main saloon next aft, followed by the galley, with the engine-room under the bridge deck and the own-



A view of the engine-room showing the installation of the Van Blerck motor



Caprice is provided with a comfortable bridge deck from which the boat is controlled. Her navigation equipment is complete in every detail

er's stateroom in the stern. The toilet in the bow of the boat is equipped with a folding mahogany washstand and lockers to port and starboard, and is finished in white paneling. The main saloon next aft, which is finished in cream enamel and mahogany, is furnished with folding berths that will accommodate four persons in utmost comfort. The other equipment in this compartment includes a folding mahogany table and on each side, wine cabinets with stained glass doors and plate mirrors and lockers beneath. Space is found for a Victrola under the cabinet on the port side. The door leading into the toilet room is fitted with a full-length plate glass mirror.

The galley which follows the main saloon contains a 300-pound built-in ice box on the starboard side, with food lockers, dish racks, stove and sink on the port side. Like the toilet room the galley is finished in white enameled panels and mahogany moulding.

The engine-room under the bridge is equipped with two 142-gallon Janney-Steinmetz pressed-steel gasoline tanks arranged to port and starboard. There are also two 25-gallon tanks for lubricating oil arranged in the same way in order to effect an equal distribution of weights. The Van Blerck motor which is installed is a six-cylinder machine with 5½-inch bore and 6-inch stroke developing 75 h.p. at 750 revolutions

The forward cabin is a comfortable compartment arranged to sleep four persons



The owner's stateroom aft is fitted with a folding double bed, mahogany chifferoni, lockers, etc. It is finished in French gray and mahogany



per minute. This motor is equipped with a Rayfield Carburetor, fed by a Stewart-Warner vacuum system. Other equipment of the motor includes a self-starting system, and the boat is lighted throughout by electricity. A cradle for the storage batteries is installed in the engine-room, which is also equipped with tool chest, work bench, etc. The finish is in gray.

The owner's cabin in the stern contains

a folding davenport, which, when open, makes a full-sized double bed with Ostermoor mattress and springs. The forward end of this stateroom, which is finished in French gray and mahogany, contains a built-in mahogany chifferoni, with plate mirror above and a locker with plate mirror at the side. On the starboard side is a mahogany settee, with movable top, which covers a toilet and lockers, and on the port side there are other lockers and a folding lavatory. An electric clock is set in the mahogany panel over the davenport. Back of this cabin there is a 50-gallon fresh water tank and a compartment for storage. The equipment includes all up-to-date nautical instruments.

Summing up, Caprice is a wholesome exponent of a type of cruiser which is constantly growing in popularity, wherein speed and seaworthiness are successfully combined.

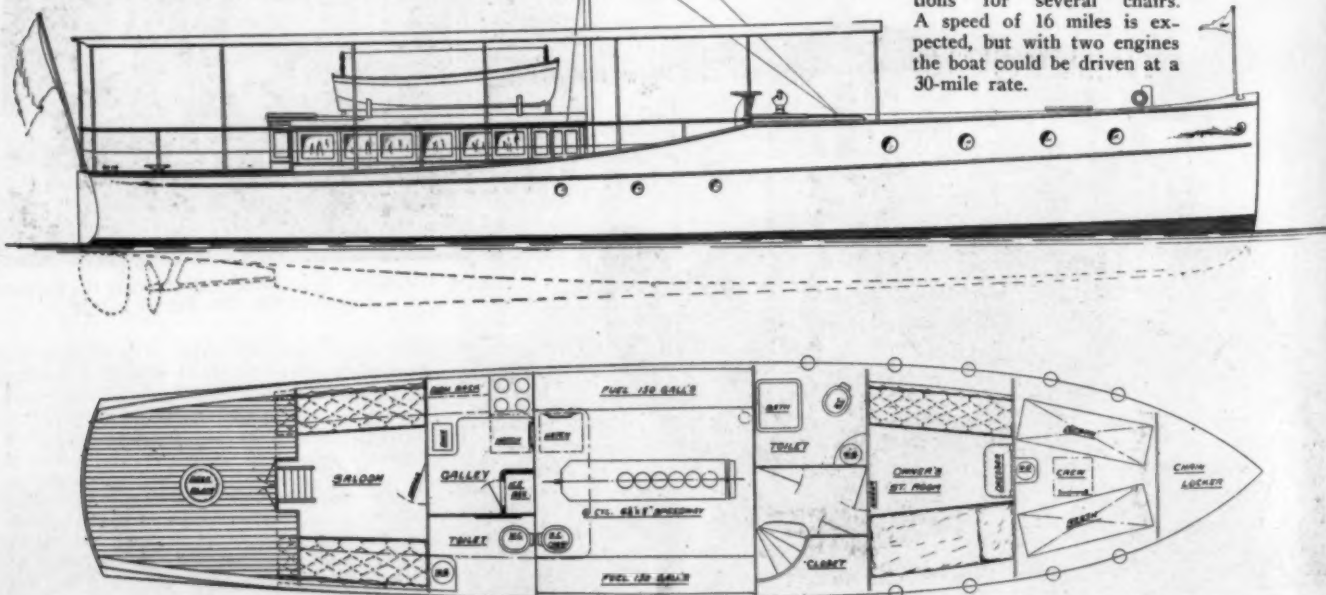
A Speed Cruiser for Southern Service

THE accompanying plans show a 55-foot high-speed cruiser designed by the Gas Engine & Power Co., and Chas. L. Seabury Co., Cons., of Morris Heights, N. Y., for Florida cruising. The arrangement is so laid out that practically no accommodation

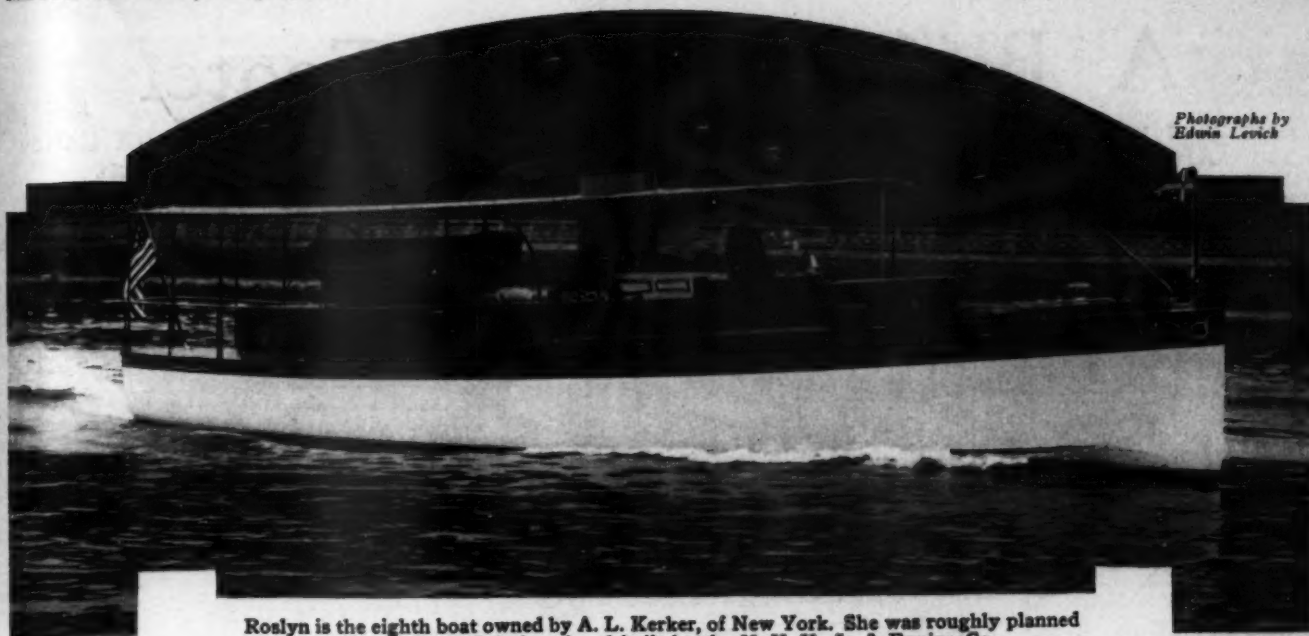
space is lost stallation. a little for under a forward raised

by the high-speed power in- The engine is installed ward of amidships, bridge deck, and the deck of the boat is so that accom-

modations for two persons with toilet and wardrobes can be arranged under. The steering wheel and controls are located on the bridge deck. Following this there is a trunk cabin divided into saloon, toilet and galley. There is a large after deck, with accommodations for several chairs. A speed of 16 miles is expected, but with two engines the boat could be driven at a 30-mile rate.



In the design of this 55-footer the Gas Engine & Power Co. and Chas. L. Seabury have contrived to give good speed without utilizing too much space for the power plant

Photographs by
Edwin Levich

Roslyn is the eighth boat owned by A. L. Kerker, of New York. She was roughly planned by her owner and designed and built by the N. Y. Y., L. & Engine Co.

Roslyn, a 54-Footer

Having Keel and Framing of Oak and Planking of Cedar, Fastened With Copper—Interior of Owner's Quarters Finished in African Mahogany—Large Galley a Feature

AN interesting cruiser which was built last year and was favorably commented on in New York waters, is Roslyn, shown in the accompanying illustrations. Her owner, A. L. Kerker, of New York City, had owned seven boats prior to the building of this one and so he had a pretty well-defined idea of what he wanted in his most recent craft. He planned the boat himself and submitted his sketches to the New York Yacht, Launch & Engine Co., who attended to the finer points in the design and built the boat at their yards in Morris Heights, under the personal supervision of the owner.

Roslyn is 54 feet over all by 11 feet beam and she has a draft of 3 feet 3 inches. She is of the raised-deck type and there is a deck-house forward, which is entered from the bridge. The latter is covered by a standing awning, which extends aft for the length of the boat. There is a single funnel amidships, and the tender is carried over the deck-house aft.

The hull of this boat is built with oak keel and framing and the planking is of white cedar, fastened entirely with copper. The houses are of teak and the decks of white pine. The interior of the owner's quarters is finished in African mahogany.

The interior layout is arranged to give ample quarters for the owner and his party and yet to leave sufficient room for the crew. The motor is placed just forward of the center of the boat, partly under the bridge deck, so that the propeller shaft enters the water at an easy angle. Pipe berths for the crew are included in the equipment of the engine-room, where is also found room for a work

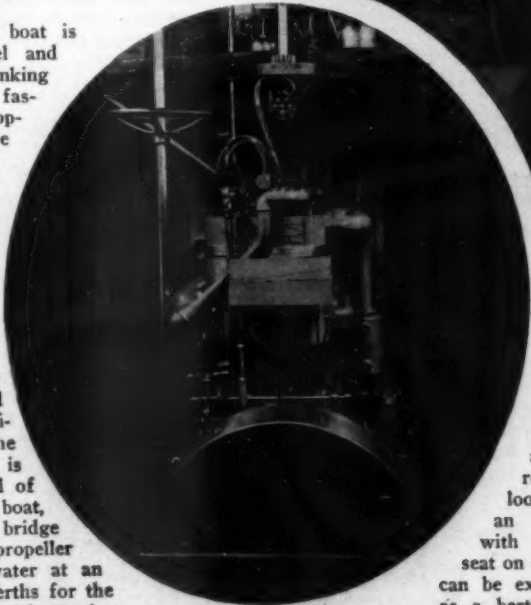
bench and other necessary equipment. A four-cylinder $6\frac{1}{2}$ by $8\frac{1}{2}$ -inch 20th Century motor is installed.

A large stateroom for the owner is located

ward and opposite it is a buffet and china closet. The galley, which is a feature of Roslyn, is forward and extends the full width of the boat. It is equipped with an ice chest, which



The main saloon connects with the galley, which is the full width of the boat and is equipped in a most complete way



The engine installed is a four-cylinder 20th Century

aft, furnished with two double berths, bureau and provided with ample closet room. The saloon is fitted with an extension table with an upholstered seat on each side, which can be extended for use as a berth. There is a capacious chest of drawers on the port side for-

fills from the deck, and the rest of the equipment is complete in every detail. The toilet is fitted with Curtiss open plumbing.

Roslyn

Owner.....	A. L. Kerker
Designer and builder,	N. Y. Y., L. & Engine Co.
Length.....	54 feet
Beam.....	11 feet
Draft.....	3 feet 3 inches
Motor.....	50 h. p., 20th Century
Speed.....	12 miles

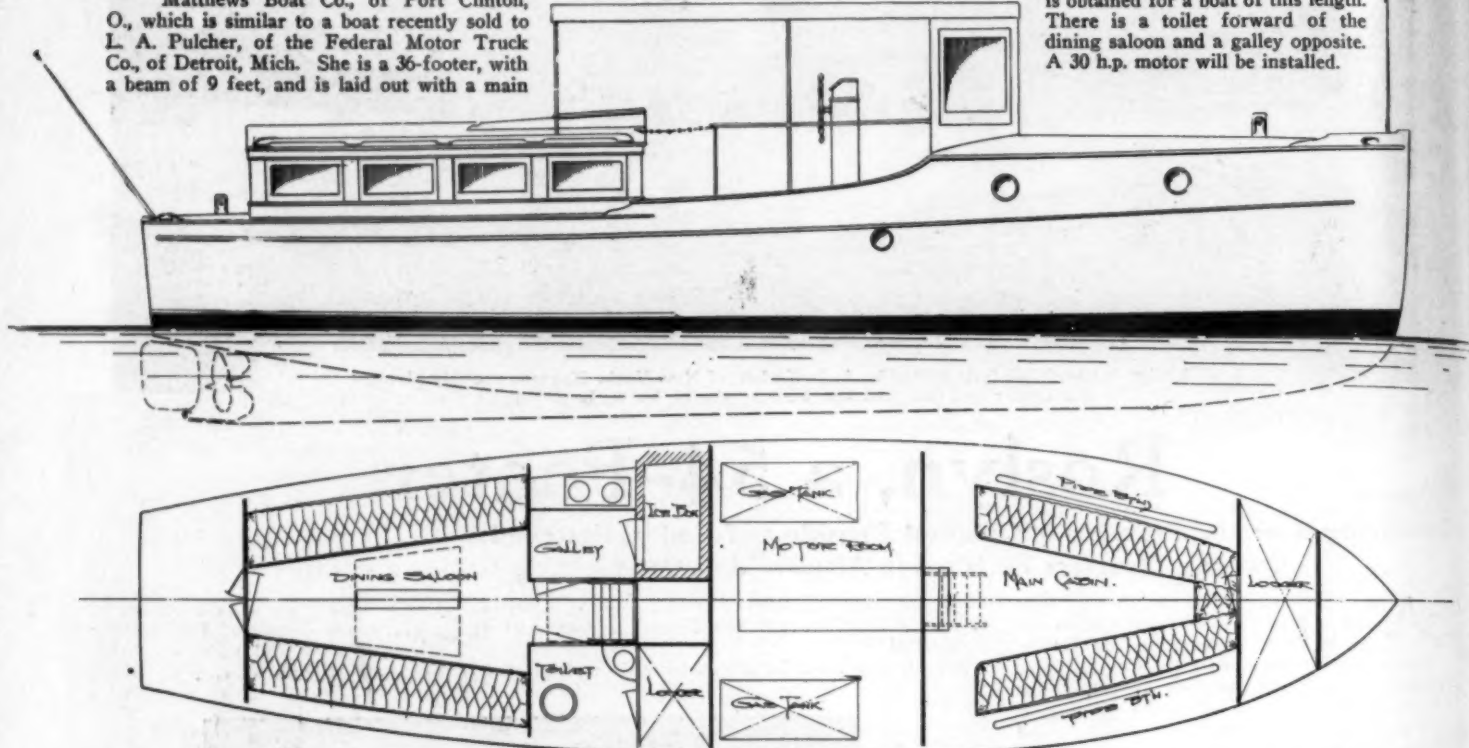
A Bridge-Deck 36-Footer

Laid Out with Main Cabin Forward, Bridge Amidships and Dining Saloon with Galley Aft—Unusual Roominess for Boat of Such Length Given by This Arrangement

THE accompanying designs show a successful type of small cruiser evolved by the Matthews Boat Co., of Port Clinton, O., which is similar to a boat recently sold to L. A. Pulcher, of the Federal Motor Truck Co., of Detroit, Mich. She is a 36-footer, with a beam of 9 feet, and is laid out with a main

cabin forward, bridge deck amidships and dining saloon under a low trunk aft. Owing to

this arrangement of placing the motor under the bridge deck an unusual amount of room is obtained for a boat of this length. There is a toilet forward of the dining saloon and a galley opposite. A 30 h.p. motor will be installed.



Lines of a 36 x 9-foot cruiser, designed by the Matthews Boat Co. A 30 h.p. motor with tanks flanking it is installed under the bridge deck

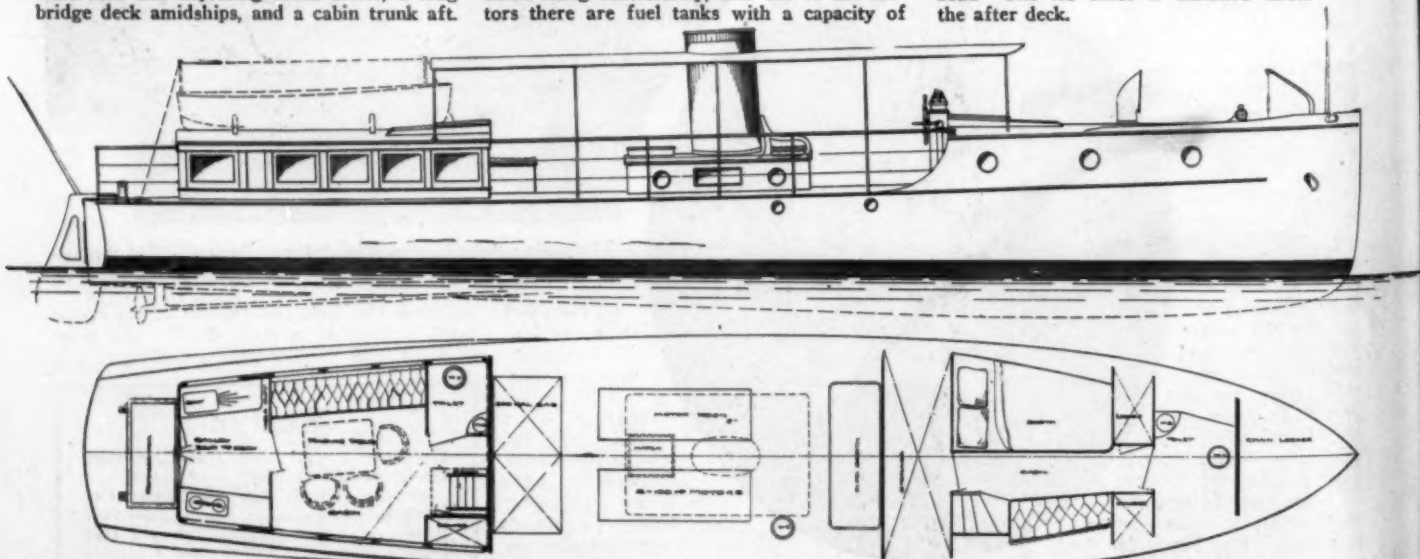
A One-Man High-Speed Cruiser

A 56-Foot Day Cruiser with Long Bridge Deck Amidships and a Cabin Trunk Aft—Powered with Two 100 H. P. Motors Which Are Expected to Give a Speed of 20 M. P. H.

HERE is another cruiser from the board of John H. Wells, of the Matthews Boat Co., Port Clinton, O.—a high-speed day type arranged for one-man control. There is a short raised deck forward with stateroom and adjoining toilet under, a long bridge deck amidships, and a cabin trunk aft.

The engine-room occupies a large amount of space amidships, and is equipped with two 100 h.p. motors, which are expected to give a speed in excess of 20 m.p.h. In the forward part of the motor compartment there is a pipe berth slung athwartship, and aft of the motors there are fuel tanks with a capacity of

200 gallons. The main saloon aft is equipped with folding table and a built-in transom on the port side. There is a toilet forward on the same side, and a door aft opens into the galley which extends the full beam of the boat. The ice chest is installed under the after deck.



An interesting 56-foot high-speed cruiser, designed by John H. Wells. The large amount of space devoted to the engine-room exemplifies the fact that where high speed is desired other features must be sacrificed



THERE was recently placed in commission at Seattle, Wash., the motor patrol boat Scout, flying the flag of the United States Coast Guard Service. The commissioning of this craft marks a very definite step forward in the service on Puget Sound, for it is the first gas-driven patrol boat ever used on this body of water, and should be simply the forerunner of the "gasification" of the entire fleet. The service maintains a fleet of three vessels for patrol duty on the Sound, in addition to the cutters that work out of Seattle on stations from Cape Flattery to Pt. Barrow Alaska. These are all steam, or have been, until Scout was recently put over.

The steam boiler and engines were removed from her hull—for Scout is a reconstructed steamer—and in their place were put large distillate tanks and a 50 h.p. Frisco Standard heavy-duty engine. The change has brought a smile of satisfaction to the face of every officer in the service who has had anything to do with it, for Scout to-day is speedier, safer, roomier, more efficient and (what always meets with the approval of the Department), a heap sight more economical.

Scout is 61½ feet long with a beam of

Scout is 61½ feet long with a beam of 12¾ feet. She is speedy, efficient and economical



The three cylinder, heavy-duty, Frisco Standard motor, installed in Scout in place of a steam outfit, drives the boat at a 10-mile rate



The interior accommodations comprise engine-room, galley, toilet and stateroom, in addition to a comfortable wheel house

12¾ feet and 6 feet draft. She is heavily built, has a roomy wheel house, engine-room, galley and stateroom, and in every way is a fine little craft for the work in which she is employed. She displaces about 37 tons, gross.

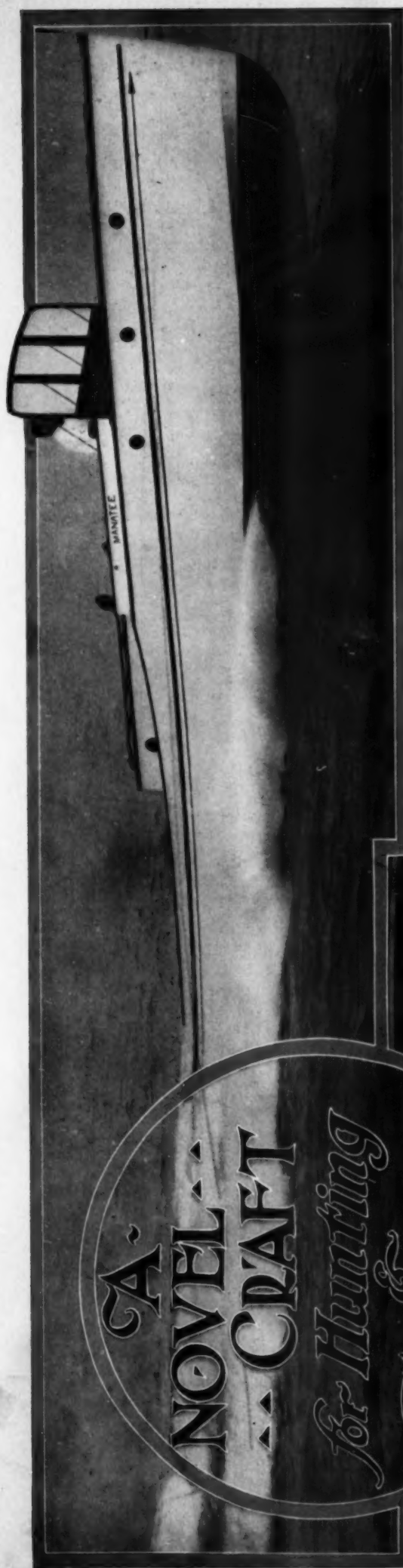
An Edison electric lighting plant is a feature of the new installation, there being twenty-six type B-6 Edison cells to store the current generated by a dynamo belted to the main engine. A fine switchboard controls

the system, and a ten-inch searchlight is mounted on the pilot-house forward.

The fuel tanks carry 600 gallons of distillate, sufficient to run the craft 100 hours, and the fresh water tanks hold about 500 gallons.

The big Frisco Standard, which is of the three-cylinder heavy-duty type, swings a 45 x 45-inch propeller, and Scout makes an average of 10 miles per hour. The engine is very carefully installed, with steel floor plates around the base, brass railings, etc. All tools and spares are mounted carefully on the engine-room bulkhead, and the entire boat, kept up in spick and span Coast Guard style, is one of the snappiest on the Coast. She is in charge of Lieut. Benjamin Lichtenberg, a veteran of the Service.

This conversion from steam is only typical of the trend nowadays on the Pacific Coast. Motor ferries, coasters, lumber tows, and, in fact, commercial vessels of all kinds powered with gasoline engines now far outnumber steam and sail in numbers if not in tonnage.



A NOVEL CRAFT for Hunting and Fishing

THE motor boat has always been sufficient to itself as a provider of sport, but its use as a means to an end seems also to be gaining in popularity. There are laws in force in nearly every state prohibiting hunting from a motor boat, but there is no legislation which will prevent a man from reaching the best hunting grounds in a motor boat. Therefore, with the perfection of the high-speed motor and the V-bottom boat there has grown a demand for a good reliable craft with day cruising accommodations and a pretty turn of speed. The hunter can select any point within a radius of thirty miles, make the run in a little over an hour and be sitting quietly in his dinghy waiting for the birds to show up in less time than it would have taken him to cover three miles of laborious rowing by the old method. Such fast boats have also found their place in off-shore fishing, and while perhaps not seaworthy enough to ride out a full sized blow their speed will suffice to bring them to safety while the wind is still tuning up for the performance.

A boat, designed by Samuel H. Brown, Jr. for just this sort of work has recently been built by Brown Bros., at Marblehead, Mass., for Lawrence F. Percival, and is shown in the accompanying illustrations. Manatee is a 35-foot V-bottom day cruiser with a cabin forward under the raised deck, the engine located in a separate house amidships, and a large cockpit aft. The toilet is in the bow and the cabin following it is provided with two transom berths and hanging spaces. There is a forward cockpit fitted with a windshield from which position the engine is controlled and the boat steered.

The sleeping cabin and toilet are under the raised deck forward

Manatee, a successful high-speed day cruiser, designed by Samuel H. Brown, Jr., for Lawrence F. Percival, of Marblehead, Mass. She is fitted with a 135 h.p. Sterling engine, and has shown a speed in excess of 25 m.p.h.

Manatee is equipped with a Model R1 135 h.p. Sterling motor fitted with a Stewart vacuum feed system, and in her trial trips she showed a speed of 25.7 m.p.h. at half throttle, while she is expected to do from 28 to 30 when wide open. On the starboard side of the engine-room may be found a berth and tool shelves,

and to port there are a pipe berth, seat and storage battery. The fuel tank is placed under the forward cockpit. The seating arrangement above decks provides for three or four folding chairs in the forward, or helmsman's cockpit, while in the after cockpit there is space for several deck chairs and a fixed seat. Fishing parties will have plenty of elbow room in this cockpit.



Looking into the engine compartment from the after cockpit. In addition to the Sterling motor this room is also fitted with berths, tool chest, etc.

PRIZE CONTEST IN QUESTIONS & ANSWERS

Removing Broken Lag Screws

How to Mend Matters When the Stuffing Box Supports Have Broken Off in the Deadwood—
Prize Winner Claims Success With Rather Unusual Method

THE PRIZE CONTEST—Answers to the First Question in the February Issue

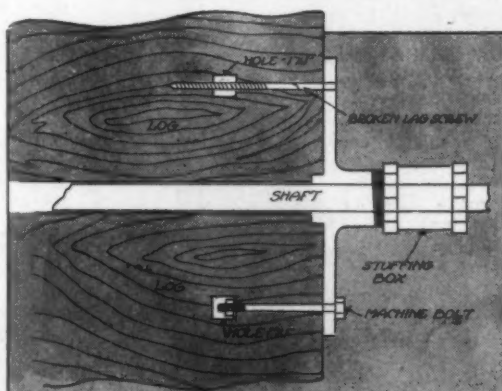
Substitutes Machine Bolts (The Prize-Winning Answer)

REMOVING stuffing box lag screws that have broken off in the deadwood or shaft log is very often almost impossible without enlarging the holes in which the lag screws are held. In most cases it will be found of advantage to leave the lag screws here and to get around the difficulty in another way.

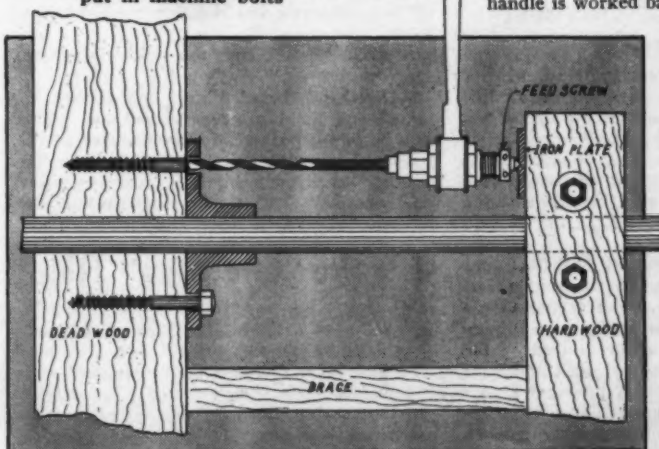
Sometimes the trouble may be avoided by giving the stuffing box a slight turn so that the new holes will come a little to the right and left of the old ones. If the deadwood is not heavy enough, of course, this is impossible.

Once on my boat two lag screws broke off in the deadwood with the outer end of the screws an inch up in the wood. I tried, unsuccessfully, many ways to get them out and finally decided to let part of them stay there and to solve the problem in another way. I made two holes an inch square clear through the deadwood from side to side in such a position that they exposed part of the lag screws. (See upper stuffing box fastening in the sketch.) In making these holes, I started with a brace and bit and finished with a hack saw. I cut off with the hack saw as much of the lag screw as was exposed by the openings, and then drove the remaining parts in until they showed in the openings and cut them off in the same way. I continued this process until all that part of the lag screws between the square holes and the back part of the deadwood had been removed. This left the lag screw holes clear from the back of the deadwood to the square holes. I now put the stuffing box on again and put in two bronze machine bolts instead of lag screws. (See lower fastening in the sketch.) I put in big bronze washers and then turned on the nuts as shown in the sketch. This is an arrangement which I consider much better than lag screws for fastening on a stuffing box, because there is no danger of "stripping" the wood, as there always is when lag screws are used

in wood that is more or less water-soaked. I intended to put bronze plates over the openings in the side of the deadwood, but I had to get overboard before I could get the plates. I simply filled up the holes with white lead putty and painted over it with copper paint. That



W. L. G. cut a hole through his deadwood, sawed off the lag screw, pushed the broken part out and put in machine bolts



The use of a ratchet for drilling out the old lag screw, as advocated by Mr. Christie

putty is still doing its duty, although it was put in five years ago.

Another way that I have seen of overcoming the trouble of broken lag screws is fastening a bronze plate on to the deadwood or shaft log and then fastening the stuffing box to that. The bronze plate should be $\frac{3}{4}$ or $\frac{1}{2}$ inch thick, and should be properly shaped and bored for the shaft and lag screws, etc. It should be fastened to the deadwood or shaft log by lag screws above and below the broken screws and the old stuffing box fastened to it by bronze cap screws.

W. L. G., Forest Hills, N. Y.

With an Inside Stuffing Box

ABOUT the only practical way to remove broken lag screws from the shaft log or deadwood is to drill the pieces out. Although it will require some time and considerable work, it is a job that any one should be able to do if he has the proper tools.

The best device for doing this kind of a job is what machinists call a ratchet. This tool works slowly, but surely, and, as the handle is worked back and forth, instead of being turned entirely around, the tool is particularly adapted for use in restricted quarters, such as around the inboard end of a shaft log.

As there is a screw feed attached to the ratchet, a rigid support must be provided to take the thrust. This would be very easy to provide in the case of an inside stuffing box screw. Blocking could be placed against the frames and floor beams and filling pieces used to bring the distance right. In the case of a stern

Questions for the June Issue of MoToR Boating

1. Discuss the essential features necessary in a motor boat to make it practical for government use in time of war.
Suggested by A. S., Astoria, L. I.

2. How can an owner, knowing little about

Answers to these questions, addressed to the Editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before April 20th, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the sender's name and address (The name will be withheld and initials or a pseudonym used if this be desired.) Questions for the next contest should reach us on or before the 20th of April.

electricity, equip his small cruiser with a few lights at small expense, the outfit to demand the minimum amount of attention after installation.
Suggested by A. O. G., Portland, Me.

3. Describe and illustrate a good method of mounting a motor and separate reverse gear so as to obtain as nearly as possible the advantages of a unit power plant.
Suggested by R. W. H., Springfield, Mass.

more than that amount. (There are three prizes—one for each question—and a contestant need send in an answer to but one if he does not care to answer all three.)

For each of the questions selected for use in the next contest any article advertised in this issue of MoToR Boating, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR Boating which sells for more than that amount.

Rules for the Contest

The prizes are: For each of the best answers to the questions above, any article advertised in the current issue of MoToR Boating, of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in the current issue of MoToR Boating which sells for

When you send in your answers you must state what you will take for a prize should you win one

bearing screw in the deadwood, the sketch is intended to show how two stout pieces of hard wood could be bolted to the propeller shaft to take the push of the feed screw.

There is no question but that the job can be done with this tool, as holes even an inch in diameter are quite easily drilled by hand, if a large ratchet is used. For drilling the small holes needed in the lag screws a ratchet of

available, one can be easily made by forging a piece of gas pipe of the proper size on a hex rod or nut, as shown on the right of Fig. 1 in the sketch.

Should the broken end be deep in the deadwood, as is usually the case, the only way is to drill out the screw. This is rather difficult and almost impossible unless some precautions are taken to keep the drill on its proper course, as the tendency is always to jump into the softer material of the shaft log or deadwood. For this reason a small hole called the "follower" should be drilled as accurately as possible down the center of the screw. This will center the large drill and keep it on its course. To drill the follower hole select a piece of gas pipe or tubing of the proper outside diameter (this should fit the screw hole in the shaft log snugly) and drive it in as far as it will go, letting a little project from the hole, of course, to facilitate removal (see Fig. 2).

This will serve as a guide for drilling the smaller or initial hole. The drill should be just an easy fit in this tube, and with the aid of a chain drill, as shown in the drawing, no trouble should be experienced even in drilling a steel lag screw. After this is done, the larger drill, which should be of about the same diameter as the lag screw, is inserted and the screw drilled entirely out. This necessitates using a larger sized lag screw as the hole in the deadwood is increased in diameter.

A method used by some machinists in removing a broken-off bolt or screw is to drill the screw as mentioned above and tap with left-hand threads.

A left-hand threaded steel bolt is then inserted and the lag screw backed out. This method is not positive, as the diameter of the left-hand threaded bolt is necessarily smaller than the lag screw and does not always possess the necessary strength for backing out the former.

W. E. MORTZ, Philadelphia, Pa.

Let the "Old Man" Help You

LAG screws that have broken off in deadwood or pipe log and still protrude a half inch or more can often be removed with a Stillson wrench, if first heated sufficiently to cause expansion, since the subsequent contraction breaks the rust.

In order to heat them, take a piece of asbestos of sufficient size to protect the wood, make a hole in it just large enough to permit the broken screw to protrude, and then apply the flame of a blow torch until the screw is well heated, remove asbestos and try with wrench.

If the previous treatment fails or the screw is broken off close to the wood it will be necessary to drill it. First prick-punch the

center of the screw, and then if there is sufficient room to use a breast drill, drill a small pilot hole from $\frac{1}{4}$ to $\frac{3}{16}$ -inch diameter into the center of the screw, two inches or more, according to its size, redrill the hole, using a larger drill, $\frac{1}{4}$ -inch, or larger, if the screw is large. Now take a square file and make the hole nearly square and tapering. If you have a piece of square tapered steel that will fit the hole, drive it in and apply wrench. If you haven't the piece of tapered stock, the tang of a large heavy file will answer, as shown in the photographs.

If the screws are large, or, as frequently happens, if there is little space to work, a ratchet drill will be needed. The ratchet and drills, the bent iron (known to mechanics as an "old man"), and the C clamp to secure the old man can be procured from a repair shop.

If an old man of the right shape and bend cannot be secured, a blacksmith can bend you one from $\frac{1}{2}$ x $1\frac{1}{2}$ -inch, or heavier, iron. The head of the ratchet is pointed to keep it from slipping and a deep prick-punch mark or slight counter bore should be made on the old man at the point desired.

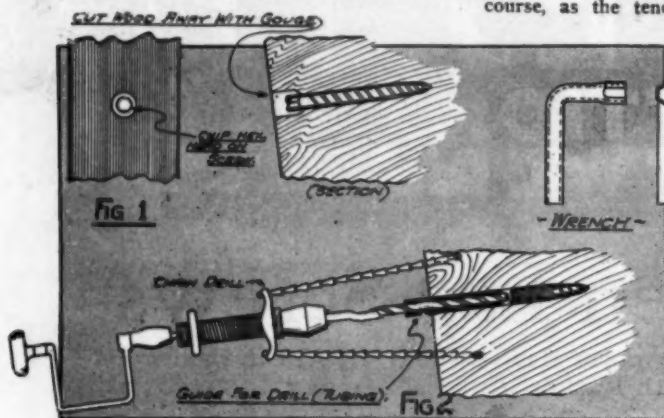
D. E. WESTERVELT, Ithaca, N. Y.

Using a Rust Solution

A STRONG solution of sal ammoniac and iron turnings makes a hard cement which may be used for filling up blow holes and the like in castings. This combination of sal ammoniac and iron works to advantage in removing broken-off lag screws in the following manner:

As large a bolt as is practicable should first be drilled into the screw for a distance of an inch or two, depending upon the length and size of screw. A piece of cold-rolled steel long enough to permit its being gripped by a pipe wrench should then be filed to a light driving fit to the hole in the lag screw. If oil is used in drilling the hole, it should be removed by means of a little swab and gasoline. Next drill

a very small hole in the wood just above the screw as far in as the screw extends and as near the screw as possible. Now mix up a strong



By the use of a chain drill Mr. Morts states that even steel screws can be successfully drilled, a follower hole being first made

very small size would be most convenient. It would also be advisable to use a drill considerably smaller than the diameter of the lag screw, as the drill will probably not go exactly in line with the screw, and for this reason would be likely to cut through the side, if too large. It would be best to use, say, a $\frac{1}{4}$ -inch drill for a $\frac{1}{2}$ -inch lag screw at first, then a larger drill can be quickly run in to remove what remains of the screw.

A center should be made in the broken screw with a punch to aid in starting the drill centrally. It should not be necessary to buy a ratchet and drills to do a single job. All machine shops that do general or repair work have them as part of their equipment, and usually their use can be obtained for a short time.

One way to avoid the trouble of drilling out the broken screw for a stuffing box would be to revolve the stuffing box slightly, so that the holes would clear the broken screw. Then bore new holes and put in two new screws.

C. H. CHRISTIE, Saginaw, Mich.

A Choice of Several Methods

REMOVING a broken lag screw is often a troublesome operation and the method best adapted depends on the size of the screw and the distance of the broken end below the surface. Below are given several methods which have seen service in actual practice and the reader should choose the one which, in his estimation, will fit the case in question.

If the screw is broken off flush with, or only a short distance below the surface of the shaft log or deadwood, cut a pocket (see Fig. 1) around the screw, using a carpenter's gouge, so as to expose about $\frac{3}{4}$ inch of the lag screw, and leave about $\frac{1}{4}$ inch clearance all around the screw. This pocket will not materially weaken the timbers and will be entirely covered up by the stern bearing when the job is completed.

Then, with a small sharp cold chisel, chip the sides of the screw to form a square or hexagonal head. The hexagonal head is better, as it leaves more metal for strength. It is a good plan before cutting the hexagon to rap the end of the screw sharply with a hammer to slightly loosen the end of the screw. If a socket wrench of the proper size is not



Mr. Westervelt shows ally how the ratchet, clamp and "old man" work in combination

The tang of a file driven into a square hole drilled centrally in the screw will often do the trick

solution of sal ammoniac and with the aid of a piece of cotton on a toothpick swab the hole out thoroughly. Moisten the piece of steel in like manner and drive it in place in the hole. With an oil can squirt the little hole over the screw full of oil to lubricate the screw, and then allow things to set.

The screw can then be removed with a pipe wrench. J. F. CAVANAGH, Meriden, Conn.

Laying Out the Race Course

Three Simple But Practicable Methods Whereby You Can Mark Off Your Distances for the Summer's Motor Boat Events Without the Use of Surveying Instruments

THE PRIZE CONTEST—Answers to the Second Question in the February Issue

River and Offshore Courses

(The Prize-Winning Answer)

WITH some straight edges make two right triangles, with a base of one foot and an altitude of six feet, driving a two-inch finish nail in each corner, as shown in the diagram. These triangles will serve as substitutes for a transit.

In laying out a river course, moor stake boats at A and B, with an observer in each. The observer in A sights B along one leg of his triangle and along the other edge to point C. The observer at B sights A along one edge of his triangle and projects the line B D. The observers are brought ashore and complete the rectangle A B C D by two more sights at C and D, respectively. The line C D is measured with a tape measure and the distance A B must be equal to C D.

Another stake boat is moored at G and the rectangle B G E F completed in a manner similar to A B C D. The process is repeated to cover the course agreed upon.

An off-shore course is shown in Fig. 2. The point A may be on shore, on the end of a dock or on an anchored boat. The distance A B is measured with a wetted cod line and made 300 feet.

A stake boat is moored at B. Lay one of the triangles on a table or box at A with the six-foot edge towards the water. Carefully sight B along the line A E B along the one-foot edge. An observer at B with the other triangle sights A along A E B and directs the course of a rowboat along the line B C in unison with A until it is plotted at the point C. The distance B C is equal to 1,800 feet, since $A E : D E = A B : X (B C)$.

By repeating the process, observers at B and C will direct a rowboat to the point F. The line B F completes the triangles in which the side B C = 1,800 feet, C F = 1,800 feet and B F = 2,545+ feet, a total of 6,145 feet, or 65 feet over a nautical mile. By placing the start or the finish at a point 65 feet away from any point of the triangle an even nautical mile is obtained. Of course, the line B C alone may be taken as a course, or the square B C F G, as suits the requirements.

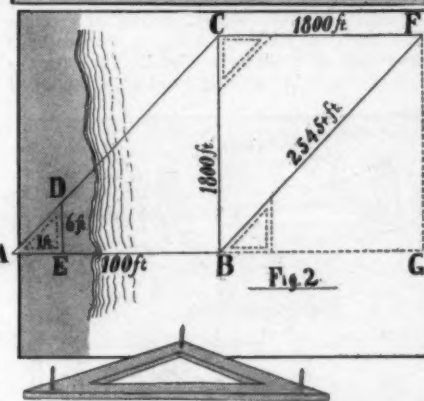
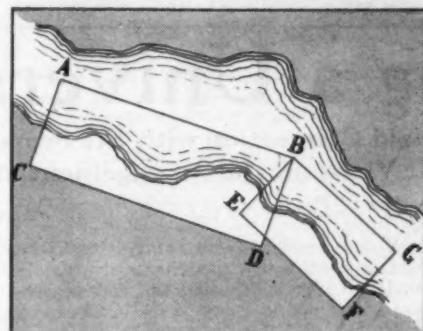
JAMES E. MURPHY,
New London, Conn.

Simple and Accurate

A SIMPLE and thoroughly practical method of laying off a race course for motor boats without the use of instruments is as follows:

Establish a beacon of any convenient construction that will form a good mark at the

desired finish point of the course; locate roughly the point a mile away in the direction of the starting line and establish there two temporary stake signals with white and black flags flying from them; one several hundred yards beyond the other and higher. These three beacons should all be lined up on range. Now proceed to measure from the first beacon along the line of range towards the two temporary beacons. This is done in the most ac-



Two diagrams illustrating Mr. Murphy's answer. In the lower picture is seen one of his right triangles

curate manner with a 100-foot steel tape, using a plumb-bob in order to keep the tape reasonably level in crossing rough or uneven ground.

Having in this manner located the point one mile from the first beacon, remove the two temporaries and establish a permanent structure similar to the first.

The next step is to establish rear beacons for the purpose of indicating the start and finish lines. We are at the second permanent beacon and desire to lay off a right triangle where the beacon forms the apex of the right angle. The sides of the triangle are to stand

in the relation of 3, 4, and 5 ($\sqrt{3^2 + 4^2} = \sqrt{25} = 5$). Hence, you can select any multiple of these figures suitable to the conditions, say, for instance, 300, 400 and 500 feet. Measure 300 feet to the rear of the beacon, estimating a direction as nearly at a right angle to your measured line as possible, do the same 400 feet along the range line, and then true up the triangle by the 500-foot hypotenuse, and at the point thus established construct a rear beacon. Proceed to the first position and repeat this operation. (See Fig. 1.)

The above explanation applies only where the shore line is comparatively straight; if there should be an indentation which prevented the measurement between the front beacons, as described, the rear beacons can be established first and the front positions obtained by laying out the triangle.

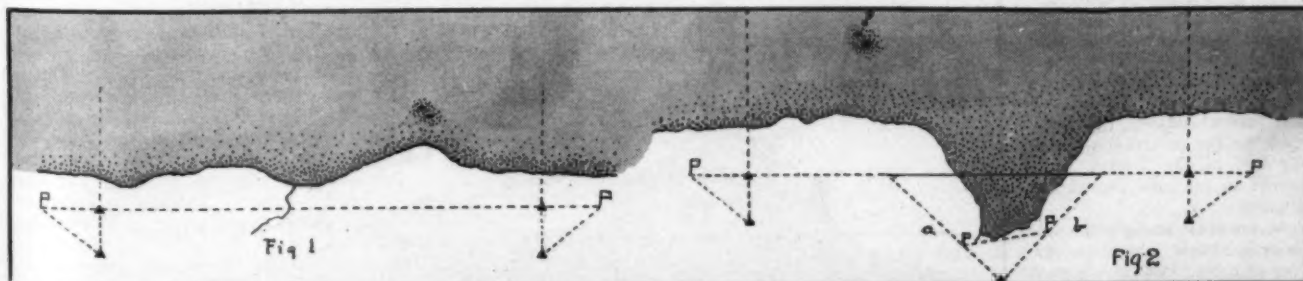
There may be, perhaps, an obstruction or inlet which prevents the measurement of the mile between either set of beacons—in such case, the section of the measurement containing the obstruction can be made the side of a right triangle, whose right angle apex is so placed as to allow freedom of measurement for its other two sides. Place a temporary beacon in this position, and lay out an auxiliary triangle by the 3, 4, 5 suggestion before given, and set up a pole with a flag at each corner. These points in line with the common beacon behind them indicate the points of intersection on the main measured course. Now the square root of the sum of the two sides A and B squared will give the length of the desired section of the main course, with which the complete mile can be obtained (see Fig. 2).

GERSHOM BRADFORD, Washington, D. C.

Plotting on the Chart

PROVIDED suitable shore marks are available it is possible to take cross bearings and establish the location of turning buoys with all necessary accuracy. The locations may be checked up by taking soundings about the points selected and comparing the depths obtained with those given on the Coast Survey chart. Care should be taken to moor the marks securely when located, so that they will not drag out of position in case of a blow. The taffrail log method is generally used for measuring off long ocean courses, but is not practical for short motor boat contests, which are usually held in sheltered waters, affording many convenient landmarks for use in taking bearings.

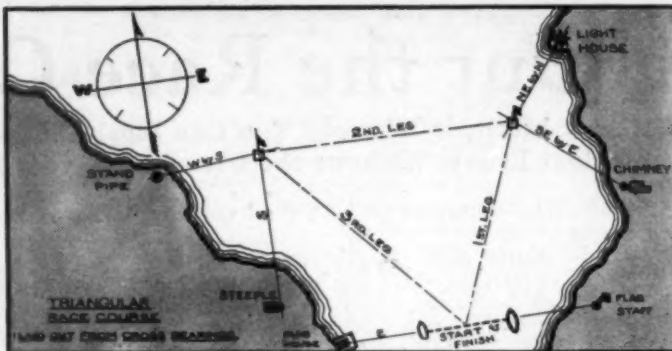
In taking cross bearings place the boat exactly over the spot desired, then by means of a sight vane on your compass (or a pelorus, if preferred) sight across the card at some prominent object on shore, which is shown on the



Mr. Bradford shows how, with no expensive equipment, a course can be laid along the shore. The right-hand diagram gives the method of procedure in the case of an obstructing inlet

chart, such as a lighthouse, steeple, standpipe or chimney. Your compass must, of course, be in an elevated position and corrected for variation and deviation. The chart used should be on as large a scale as possible. Next swing the vane through a fairly wide angle, say about 90 degrees, more or less, and sight another suitable landmark, in each case carefully noting the bearing, magnetic. Be sure to take the two bearings without any delay between sights, as the boat's position may vary and interfere with the accuracy of your observations.

Having noted the two bearings, the next step is to transfer with the parallel rules each bearing from the nearest compass rose on the chart, and, using a hard, sharply-pointed pencil, rule the



Mr. Goold shows how, with the use of a Government chart, it is possible to take cross bearings and establish the turning buoys with accuracy

the position of your turning mark. The remaining marks are established in the same manner, and the dots may then be connected with fine pencil lines on the chart, thus outlining the course. The different legs may now be scaled off for distance in the usual manner, great care being used to insure accuracy.

Predetermined distances may be measured off by plotting the course on the chart first and then finding the turning points in the manner just described, the shore marks and bearing angles having been fixed upon in advance to give legs of the required length. Of course, the positions must be buoyed as soon as they are verified, although the regular turning marks need not be placed until convenient. ALLAN O. GOOLD, Portland, Maine.

Installing a Universal Joint

When the Motor is Set Level a Rigid Connection with the Propeller Shaft is Impossible; Several Contestants, Therefore, Air Their Views on the Arrangement of Thrust Bearings and Universal

THE PRIZE CONTEST—Answers to the Third Question in the February Issue

Recommends Two Joints

(The Prize-Winning Answer)

WHEN the engine is set level, some form of universal joint must be used to connect with the propeller shaft, but in order to give satisfaction this must be installed correctly, with the proper thrust bearings and journal boxes and the lubrication

stallation described below two universal joints will be used, firstly, to decrease the working angle of each individual joint, and secondly, to increase the flexibility of the installation as follows:

Suppose the two shafts, instead of meeting in a universal joint, as in Fig. 4, were to have their ends pointed, as in Fig. 3. Then for the two shafts to be properly lined up, the pointed

ends should exactly meet. Any bending of the hull or settling of the engine bed would throw the two points out of line, unless the center of motion should exactly coincide with the point X, which could not very well happen. This bending would therefore throw the shafts out of line, and if a universal joint were installed at X there would be friction, heating and loss of power.

If, however, two joints were installed, it can be seen that there would be more flexibility, especially if the hub of one of the joints made a sliding fit (keyway sliding over a spline, etc.) upon the intermediate shaft.

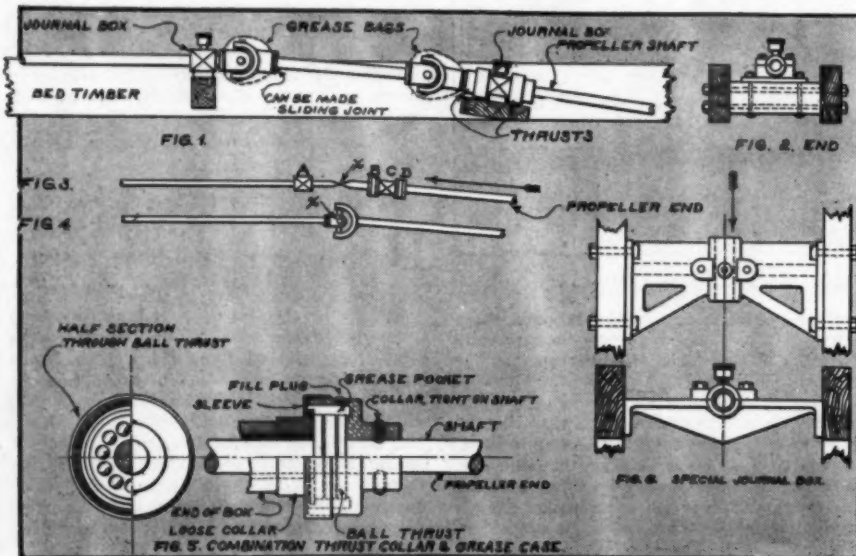
Even if this flexibility is allowed for, there must be two journal boxes and two thrust bearings. Referring to Fig. 3, the arrow shows the direction of the propeller thrust and it can be seen that if no boxes were used the level shaft would be sprung up. A ball thrust must be used at D to take up this thrust and another at B to take the pull when the propeller is reversed. These ball thrusts are a stock article and can be obtained for any size of shaft; they consist of a ball race between two hard steel washers.

The journal boxes must be well fastened down; in the drawings they are shown bolted to two cross timbers, which are secured between the engine bed timbers. Especial care must be used in installing the after box, for this takes all the thrust of the propeller.

A more elaborate scheme is shown at Fig. 6, which is a specially made box that bolts in between the engine timbers, the direction of the forward thrust being shown by the arrow.

H. H. PARKER,

Oakland, Cal.

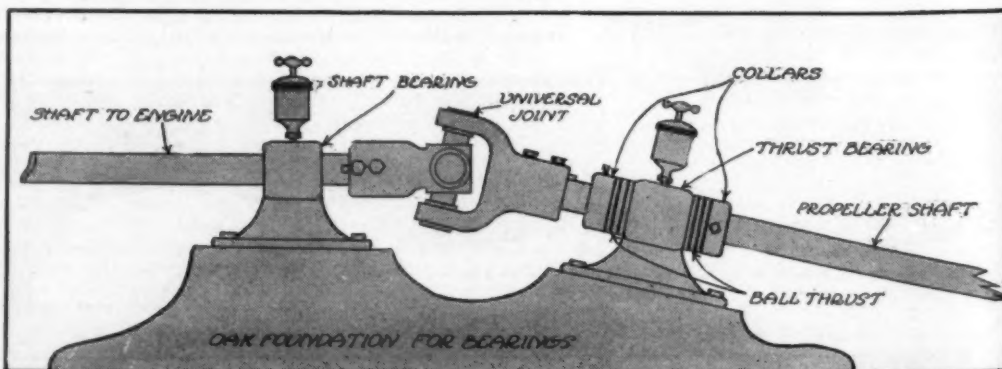


Working drawing of universal joints, thrust bearings, journal box, etc., suggested by Mr. Parker

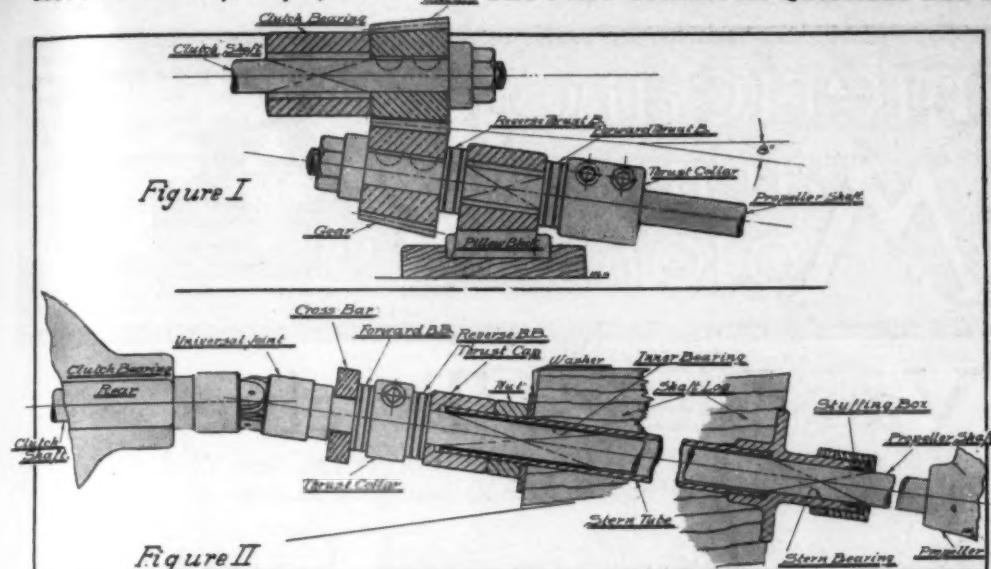
must be carefully looked after.

The driven shaft working from a universal joint does not rotate at a constant rate, due to the angular drive, and this unequal rotation increases with the angle of the shafts. Furthermore, the greater the angle, the greater the friction and loss of power; the angle made by the driven shaft with the line of the driving shaft should in no case exceed ten degrees.

As the shaft angle in the majority of cases where the engine of a boat is to be set level will be nearly equal to or will exceed ten degrees, in the in-



Mr. Wyman considers the use of a solid foundation for the thrust bearings one of the prime essentials



In Fig. 1 Mr. Wedesweiler shows how he drove his propeller by bevel gearing, and in Fig. 2 he gives a universal joint arrangement with the shaft turning in a bronze tube

Eliminate Strain

I HAVE installed several universal joints as shown in the drawing and they have given good service. With the universal joint the engine may be set level or at reasonable angle with the propeller shaft. In installing a universal joint and thrust bearing it is very necessary to place the thrust bearing so there will be no strain on the universal joint. This is easily attended to by installing a solid foundation for the thrust bearing and securing the bearing thoroughly. Most any good bearing will do if the surface on the ends is large enough to take care of thrust, and it can be made up as follows: I would use a good ball thrust both fore and aft of the bearing, with collars set up tight enough to take up the fore and aft motion of the shaft. The bearing should be provided with a grease cup. Another important matter to look into is to see that the center of the universal joint is exactly at the apex of the angle. I also provide the engine shaft with a bearing unless the universal joint comes quite close to the gear or engine bearing, but in all cases the thrust bearing should be between the universal joint and the propeller.

CLAUDE E. WYMAN,
Minneapolis, Minn.

In Actual Use

SOME eight years ago I replaced a one-cylinder motor by a two-cylinder one, and on lining up the much longer engine with the propeller shaft I saw that the arrangement looked ridiculous. I then tried setting the engine horizontally, but found that on account of the distance of the clutch below the center-line of the shaft, it would have had to go further forward than available space permitted. I then set up the engine independent of the propeller shaft and connected the shafts by a set of bevel gears (see Fig. 1). Under this condition it was necessary to have the propeller shaft self-contained, with outside and inside bearings, and forward and reverse thrust bearings. This made it unnecessary to set the engine in absolute alignment with the tail shaft. Furthermore, the engine and clutch

both were entirely relieved of any thrust.

Although this scheme worked well, it was not without its faults, and in 1914 I built a second boat and, profiting by my former experience, I installed the following arrangement (see Fig. 2): The propeller shaft is mounted

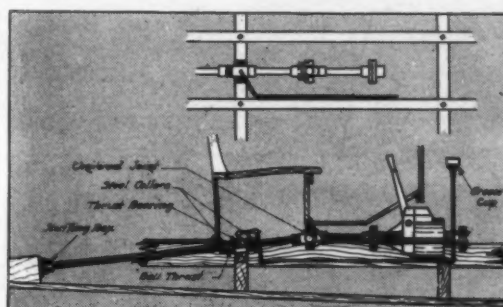
in a stern tube, the rear end of which is screwed into the stern bearing and stuffing box, with the front end babbitted to form an inner bearing. This end of the tube is also threaded and a cap is screwed on, against which the reverse thrust ball bearing directly presses. Behind this cap is a nut, which makes up against the shaft log, and pulls the stern bearing flange, by means of the tube, into a recess in the shaft log. There are no lag screws used to hold the stern bearing and stuffing box.

In front of the reverse thrust ball bearing a collar is fastened to the propeller shaft, in front of which is the forward thrust ball bearing. Directly forward of this last mentioned thrust bearing is a cross bar, securely fastened to the engine bed, which takes up all the propeller thrust. The propeller shaft passes through a somewhat larger hole than the diameter of the shaft in the cross bar. On the protruding end a universal joint is securely fastened. The engine may now be set in any position within the range of the joint.

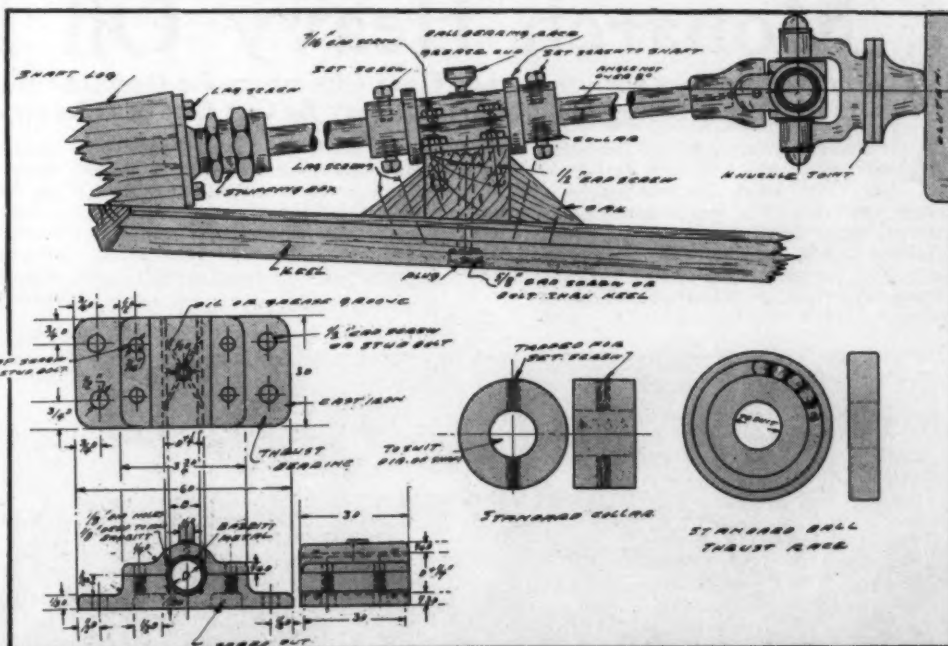
Maximum Angle 8 Degrees

THE detailed drawing shows a somewhat simple method developed. The thrust is transmitted both fore and aft to the thrust block by means of set-screwed collars. These act on ball bearing races, which can be purchased at any ship chandler's for a nominal sum. The thrust bearing proper is either made to suit the conditions or is a stock bearing. Some use an ordinary babbitted hanger bearing, where the thrust is less severe. The thrust block is of oak or yellow pine and may be fastened to keel and stringers, to keel only or to keel and engine foundations, or fitted to suit any particular condition.

The shaft angle should be held between five and eight degrees, or less, for maximum efficiency. WARREN P. SNOWS,
Philadelphia, Pa



The above plan by L. R. Kelley, of Philadelphia, shows the shaft arrangement in a 23-footer, wherein particular emphasis was laid on the lubrication of the thrust bearing



Comprehensive drawings prepared by Mr. Snows, giving detailed specifications of the parts used, together with proportionate sizes for any shaft hole and bearing



The Van Blerck Twelve

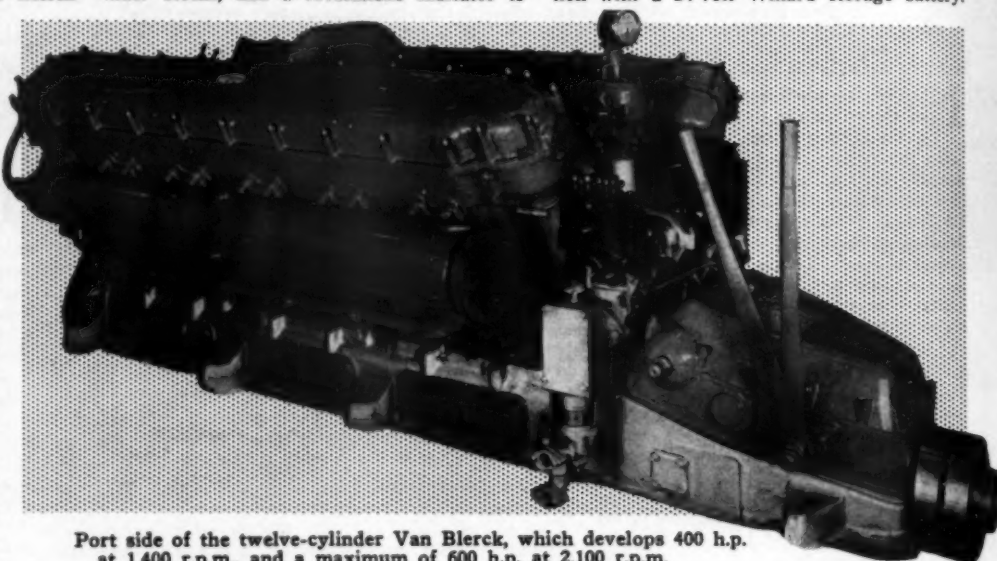
The V-Type Twin-Six Motor of 400 H. P. Which Created a Sensation at the New York Show—More Powerful Than a Dozen Twelve-Cylinder Automobile Motors

A MOTOR which caused no less than a sensation at the recent New York Show was the new twin-six 400 h.p. machine, manufactured by the Van Blerck Motor Co., of Monroe, Mich. A motor of this type absolutely dwarfs the twelve-cylinder automobile motors which made their appearance last year, as it is capable of developing as much power as a dozen of the latter. The Van Blerck twelve, which is intended for use in large express cruisers, and will, no doubt, oftentimes be installed with reducing gears, is constructed with two blocks of 6 x 7-inch cylinders set at a V with one block offset to permit the side by side fastening of the connecting rods on the crank throws. There is a separate camshaft for each block carried on top of the cylinders, and these camshafts, as well as the magnetos, generator, air pumps, oil, water and bilge pumps are driven by noiseless bevel gears running in oil.

The carbureter, a Stewart, is carried in the V, and the spark plugs are mounted on the inner sides of the cylinder blocks, but there is no confusion of parts in the V to make the motor inaccessible, as has not always

been the case with the automobile motors of this type. The two two-spark Berling high tension magnetos are mounted aft of the cylinder blocks, and a revolutions indicator is

permanently installed upon them. The electric starter, with which this motor is equipped, is of the Leece-Neville type, operating in conjunction with a 24-volt Willard storage battery.



Port side of the twelve-cylinder Van Blerck, which develops 400 h.p. at 1,400 r.p.m., and a maximum of 600 h.p. at 2,100 r.p.m.

Monarch Heavy Oil Engines

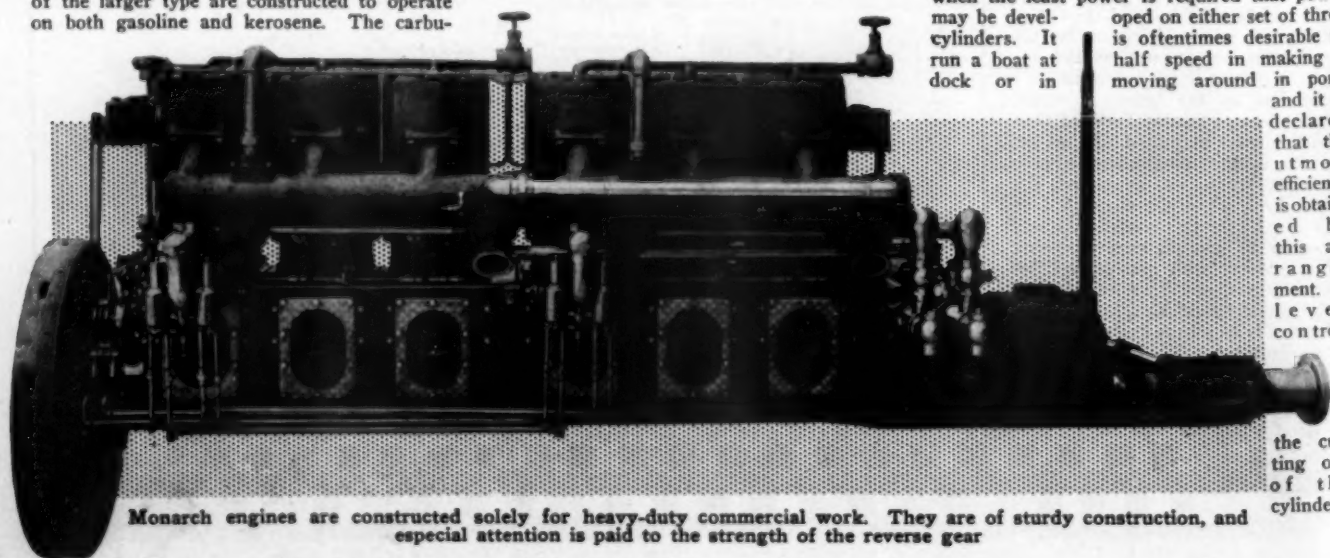
Having Carbureters with Separate Float Chambers for Gasoline and Kerosene—Cylinders in Units of Three, Either Unit of Which May Be Cut Out of Operation for Slow-Speed Work

AN interesting motor of the heavy-duty type, which has been built for several years, and which has been subject to recent modifications, is the Monarch, manufactured by the Grand Rapids Gas Engine Co., of Grand Rapids, Mich. Monarch engines are built solely for commercial service, and those of the larger type are constructed to operate on both gasoline and kerosene. The carbureter

is of special design, having a reservoir for gasoline and one for kerosene. A single three-way valve, with a delicately adjustable needle point, enables the operator to shift from one fuel to the other without interfering with the engine action or the needle valve adjustment. The carbureter is supplied with both

gasoline and kerosene by a double pump, automatically operated or manually controlled by the operator in the act of starting the engine.

The six-cylinder engine shown consists of two separate three-cylinder units with an arrangement by which either set of three cylinders may be instantly disengaged so that when the least power is required that power may be developed on either set of three cylinders. It is oftentimes desirable to run a boat at half speed in making a dock or in moving around in port, and it is declared that the utmost efficiency is obtained by this arrangement. A lever controls



Monarch engines are constructed solely for heavy-duty commercial work. They are of sturdy construction, and special attention is paid to the strength of the reverse gear

the cutting out of the cylinders.

The New Line of Automatics

Having Independent Cylinders of the L Type with All Valves Mechanically Operated and Readily Removable—Special Attention Directed to the Oiling System, Which Is Built Into the Motor

AS in keeping with its progressive, forward policy, the Automatic Machine Co., of Bridgeport, Conn., has brought out this year a new line of Automatic engines, designed and built especially for the yachting trade. These Automatic cruising engines are, of course, not so heavy as the regular models, but they are declared to be equal in every way to any emergency of the kind of service for which they are to be

used. They are built with four and six cylinders in sizes from 30 to 150 h.p., with bore and stroke in inches as follows: 5×7 , $6\frac{1}{2} \times 8$, $7\frac{1}{2} \times 9$, and $8\frac{1}{2} \times 10$. They are designed to operate at speeds ranging from 400 to 1,000

revolutions per minute. The cylinders are of the L type, and are separate and independent.

Both the inlet and exhaust valves are operated mechanically, and these valves are so designed that they can be reground and seated without removing the cylinder head, or disturbing it in any way. All of the bearings are extra large, are so constructed as to be readily removed, and are made of a special bronze, no babbitt being used.

Particular attention has been directed to the oiling system, which has been built right into the engine and is entirely enclosed. A force pump circulates the oil from a reservoir in the base and drives it directly to the connecting rod bearings, which in turn splash it over the whole interior of the motor.

The speed of the engine is controlled by a governor which may be set at any desired point; a single lever thus regulates the timing of the spark and the amount of gas admitted into the cylinders. With the exception of the flywheel and the air and water pumps, the entire engine is enclosed, thus presenting a most clean-cut, business-like appearance.



Starboard side of the new four-cylinder Automatic. The line is made in four and six cylinders, ranging in power from 30 to 150 h.p.

The Newest Speedway Motor

A Six-Cylinder Machine Developing 130-150 H. P. Which Embodies the Best Features of High-Speed Cruiser and Runabout Engines—Cylinders of L Type Cast in Pairs

THE Gas Engine & Power Company, and Charles L. Seabury & Company, Cons., of Morris Heights, New York City, builders of the well-known Speedway marine gasoline engines, are putting on the market a new model high-speed motor for use in runabouts and express cruisers, introducing the latest and best features in marine engine design. It is a six-cylinder model, of $5\frac{3}{4} \times 7$ -inch bore and stroke, developing 130-150 h.p., and weighing 1,800 pounds.

The engine is of the inclosed type, giving a noiseless, compact and smooth running unit. The cylinders are cast in pairs, of the L-head

type, with integral heads and jackets. Screwed caps fit over all valves in the cylinders. A plate is fitted over the four valves on each pair of cylinders, forming a water jacket over the valve caps, thus making the space over the valve caps a part of the cylinder water circulation. This assures an even temperature and prevents all hot spots on top of the cylinders.

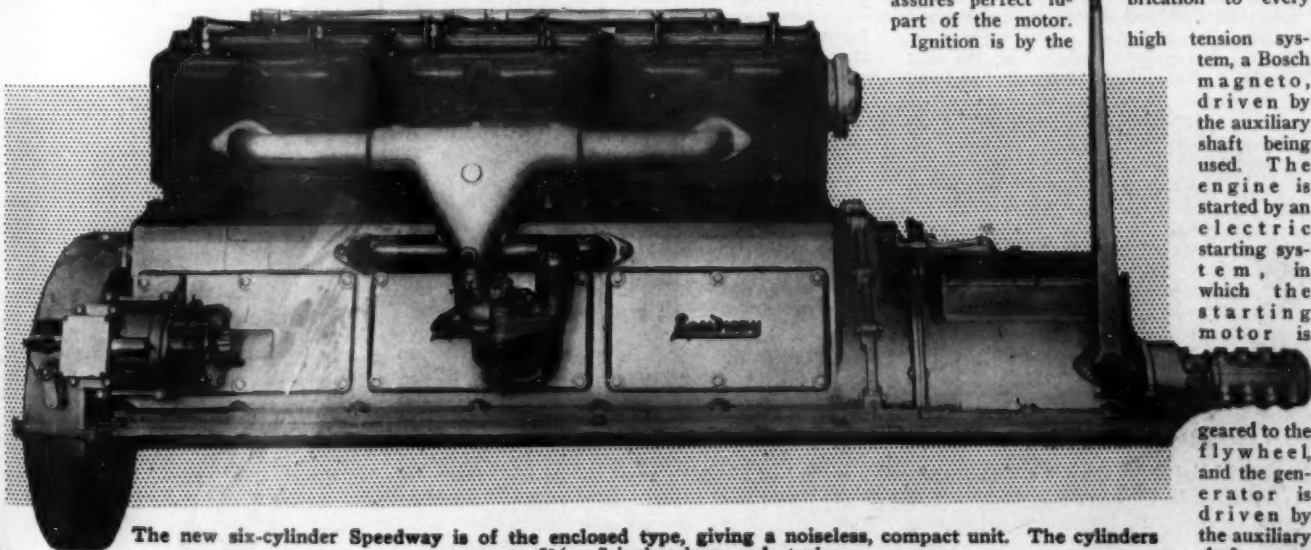
The bed is of the marine type, with bearings between each two cylinders and cast with extension for clutch and ball thrust. The frame is provided with large hand holes so that the main bearings, rods and crankpin bearings are accessible. The camshaft and gear are housed

in the frame, and the gears are located at the after end of the engine with bearings on each side to insure smooth running. An auxiliary shaft gear drives the lubricating pump on the after side, and the water pump, generator and magneto on the forward side. The crankshaft is generous in size, and is of the hollow type. The flywheel is flanged to the forward end and enclosed by a special casing.

The pressure oiling system in this motor is the result of years of experience and study. This system, it is said, is fool-proof, require minor adjustment, requires little attention and assures perfect lubrication to every part of the motor. Ignition is by the

high tension system, a Bosch magneto, driven by the auxiliary shaft being used. The engine is started by an electric starting system, in which the starting motor is

geared to the flywheel, and the generator is driven by the auxiliary shaft.



The new six-cylinder Speedway is of the enclosed type, giving a noiseless, compact unit. The cylinders measure $5\frac{3}{4} \times 7$ inches bore and stroke

A Pacific Coast Diesel

New Atlas Motors Stated to Include Many Improvements Over Existing Engines of This Type—Starting and Reversing on 100 Pounds' Pressure. Economy, Durability, Etc., Features

HAVING been engaged in the building of internal combustion engines for more than twenty years, the Atlas Gas Engine Co., of Oakland, Cal., has commenced the manufacture of the Atlas heavy oil engine of the full Diesel principle, and it states that its initial efforts were very successful, inasmuch as the first experimental engine proved to be equal to any engine of its kind in point of working qualities and efficiency. This experimental engine, having four cylinders with 9-inch bore and 12-inch stroke, was rated at 110 h.p., but it was found that at a speed slightly increased over normal, it would develop 150 h.p., while at its normal 300 r.p.m. it showed its actual 110 h.p. on long continuous runs.

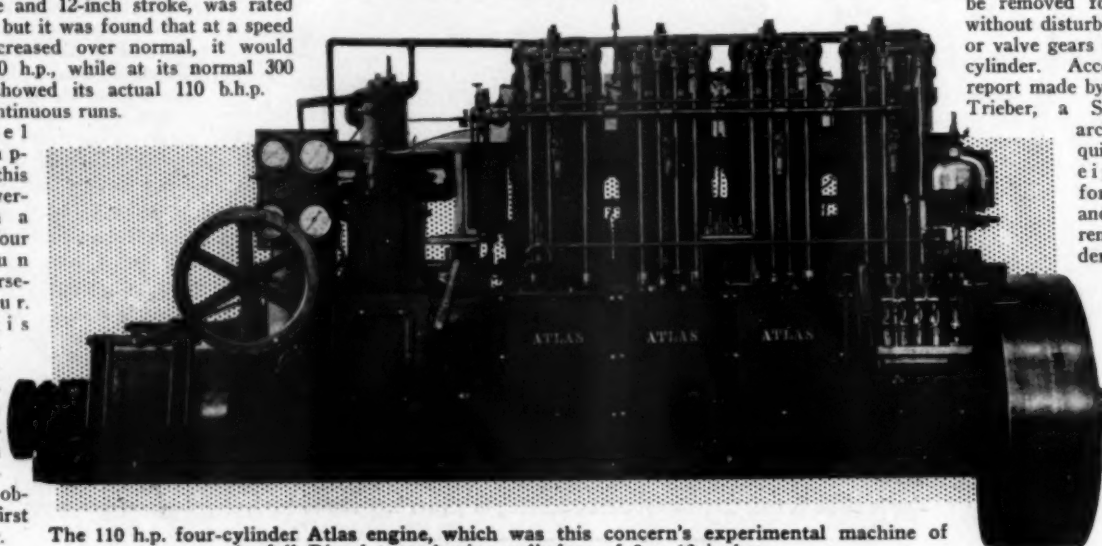
The fuel consumption of this motor averaged in a twenty-four hours' run .446 per horsepower hour. While this economy cannot be considered phenomenal it was gratifying to obtain on a first experiment.

Many new features have been added to the Atlas engines, which have not been previously embodied in other makes of similar type. For instance, it is possible to start and reverse the Atlas with only 100 pounds of air pressure in the tanks. The pressure in the spray bottle, of course, is as high as is ordinarily used in Diesel motors.

By a thorough and ingenious oiling system it is stated that it has been possible to lubricate in a proper manner every part of this

110 h.p. motor with a half pint of good mineral oil per hour. Special care has been taken in regard to the circulating system and the water-jacketed parts, and the makers state that when the engine has been running for a number of hours the heat has been found almost uniform in all parts of the cylinders and cylinder heads.

Another point that has been gone into thoroughly is accessibility, the construction being such that any one cylinder head or piston may be removed for inspection without disturbing the parts or valve gears of any other cylinder. According to a report made by Capt. O. D. Trieber, a Seattle naval architect, it required only eight minutes for one man and a helper to remove a cylinder head after the completion of a long trial run although the heads had not been touched for three months previously to this.



The 110 h.p. four-cylinder Atlas engine, which was this concern's experimental machine of the full Diesel type, having cylinders of 9 x 12 inches

The Model D Jr. Gray

A Sturdy Little Two-Cylinder Four-Cycle Motor Which Develops Its Normal Rated Power at 1,200 R. P. M., and Can Be Speeded Up to 2,000 R. P. M.—Pressure Oiling a Big Feature

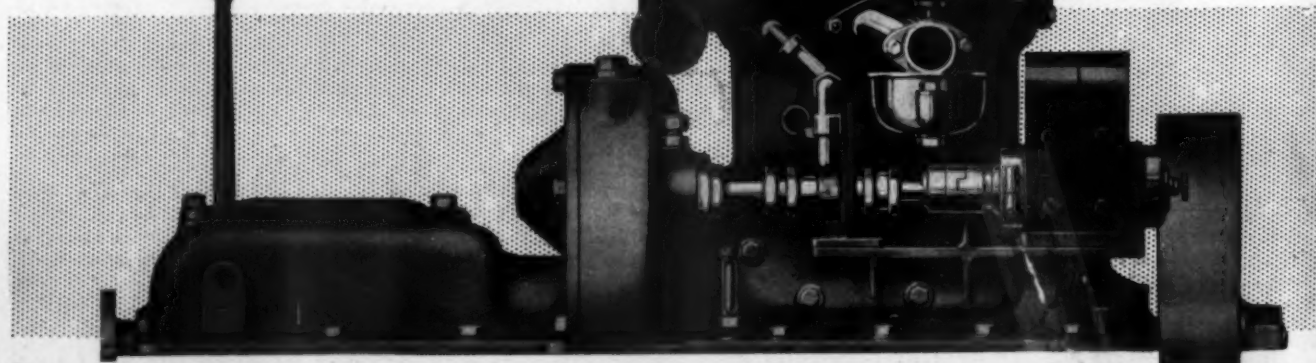
IT has been said that the new two-cylinder Model D Jr. Gray is sure to make marine engine history because of inherent features which have never before been incorporated in a marine motor selling for less than one thousand dollars. This motor is an efficient little power plant, manufactured by the Gray Motor Co., of Detroit, Mich., which, with 3 x 4-inch cylinders, is rated at 6-7 h.p. A large crankshaft, ample bearings and perfect balance, both explosively and mechanically, are declared to make it one of the smoothest and quietest two-cylinder four-cycle motors ever placed on the market.

Generous sizes and dimensions are the rule throughout this motor, the valves, for instance, being 1 3/4 inches in the clear, the camshaft 1 3/4 inches in diameter, and the

crankshaft 2 3/4 inches in diameter. The camshaft and the pump and magneto drive shaft are operated by silent chains, as in the older Model D Gray. The weight of the complete unit power plant is about 300 pounds, including, of course, the magneto and the built-in reverse gear.

One of the chief features of the D Jr. is its accessibility, and while all of the moving parts are fully enclosed every point of the motor is easily get-at-able. To show its extreme accessibility, one of these motors was taken down in the Gray Company's plant by the use of three double end wrenches.

The main feature of this Gray D Jr., however, is the positive pressure oiling system, which provides for perfect lubrication at the extremely high speed of 2,000 r.p.m., at which this motor can be run. The crankshaft is drilled laterally through webs and bearings, so that the oil is taken under pressure to the forward main bearing, then to each connecting rod bearing, and from there to the rear main bearing, from which it is forced to the silent chain sprocket. The camshaft bearings, cylinder walls and piston pin bearings are copiously supplied with oil from the throw-off from the connecting rod bearings.



The new Model D Jr. Gray is a high-speed unit power plant of which great things are expected during the coming season. In its design are incorporated such features as hollow crankshaft, removable cylinder head, oversize crankshaft and bearings, silent chain drives, etc.

From MOTOR BOATING Readers

This department of MoToR Boating is maintained for the purpose of giving its readers opportunity to ask questions, reply to other correspondents' communications and submit ideas, suggestions, opinions or experiences which may be of interest and assistance to motor boatmen. There are no rules governing the department other than that postage must be enclosed when an answer by mail is desired, and that the name and address of the writer must be given in each instance. No anonymous contributions will be considered for publication, but initials or a pseudonym will be substituted for the writer's own name if the request be made. The editor does not, of course, hold himself responsible for statements made or opinions expressed by contributors to this department.

A Noteworthy Quadruple-Screw Sea Sled

One of the most remarkable boats which has ever been built was given her official try-outs recently by the Navy Department and came through the test with flying colors. This is a new 38-foot Sea Sled powered with four eight-cylinder Van Blerck motors delivering approximately 185 h.p. each at 1,400 r.p.m., the motors driving four surface propellers.

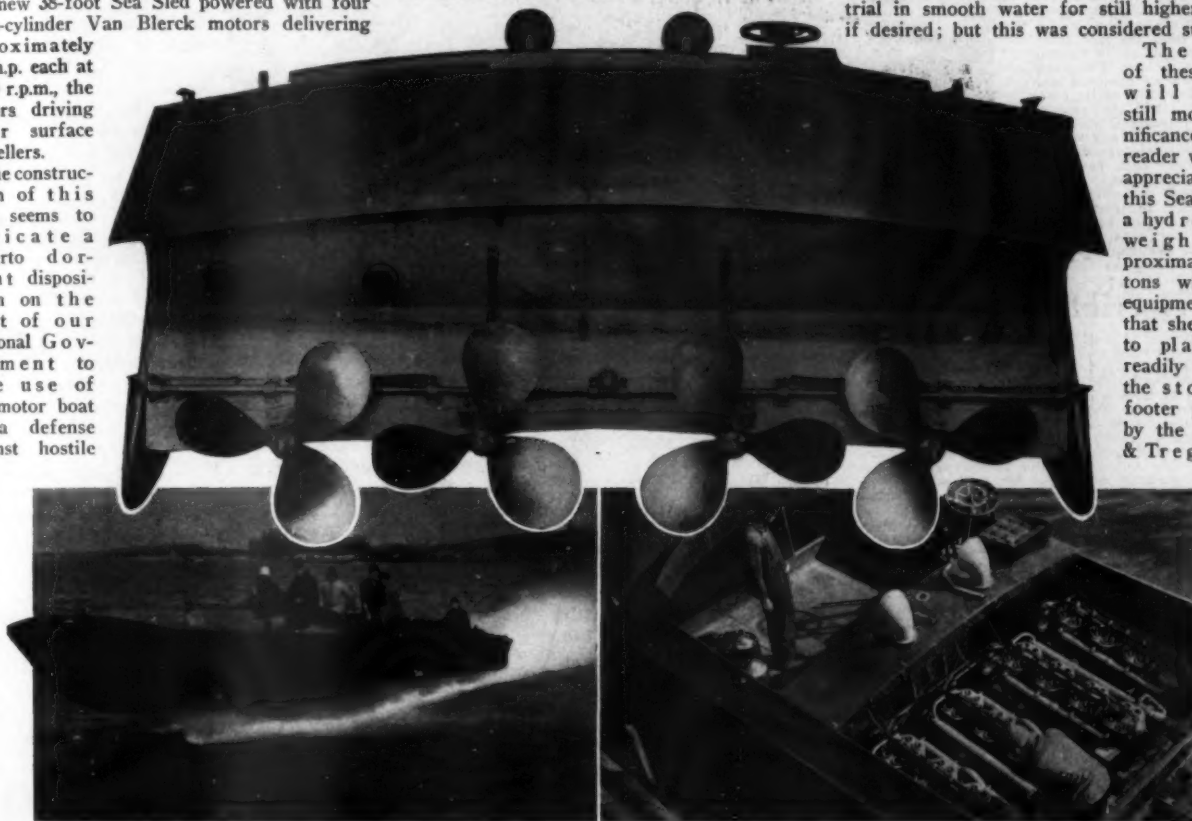
The construction of this boat seems to indicate a hitherto dormant disposition on the part of our National Government to make use of the motor boat as a defense against hostile

m.p.h. or 3 miles better than that required by the Navy Department for this class of boat. As it was, the boat was not driven to her limit, but just pushed along so as to run comfortably in a seaway.

The second test was to determine the radius of the turning circle at full speed, and this circle was effected within a radius of 30 yards

in smooth water, but the boat was taken out and put over the Peddocks Island course in a fairly stiff chop, which could hardly have been called smooth water. However, a speed of approximately 40 statute miles an hour was attained with the engines turning at 1,400 r.p.m., and the Government officials offered to give the Murray & Tregurtha Co. another trial in smooth water for still higher speed, if desired; but this was considered sufficient.

The success of these tests will have still more significance to the reader when he appreciates that this Sea Sled is a hydroplane weighing approximately ten tons with full equipment and that she is said to plane as readily as does the stock 32-footer put out by the Murray & Tregurtha



Three views of the 38-foot Sea Sled, recently completed by Murray & Tregurtha, and accepted by the U. S. Navy. In some ways she is the most remarkable motor boat ever completed. Certainly she is unique as a hydroplane, as she is powered with four motors (Van Blerck), turning separate screws, and although weighing ten tons planes readily and makes a speed of over 40 miles per hour

battleships and submarines, for in the building specifications it was required that the Sea Sled be capable of carrying a torpedo and a machine gun. The Navy officials also specified that a speed of 34 m.p.h. must be attained in a moderate offshore sea, and the handsome way in which this requirement was fulfilled will be seen from the following account of the trial tests:

Early in January the Sea Sled, which has a moulded length of 38 feet and a total length of approximately 41 feet by a beam of 11 feet 3 inches, was taken out from Boston in a stiff southwesterly breeze with six passengers aboard and a dead weight representing the weight of armament carried in the torpedo tube supports forward. The course was a seven-mile run to Egg Rock outside of Boston Harbor and although the breeze was heavy enough to make whitecaps everywhere the run was made in 11 minutes and 19 seconds, giving a speed of approximately 37

and in approximately 10 or 12 seconds. The third test consisted of slowing down from 40 m.p.h. to a speed of 10 or 12 miles for firing a torpedo, and this test was repeated a number of times, showing an average time required of 4 seconds. In the fourth test the Sea Sled was started with no way on and with clutches thrown out, and attained a planing speed in an average of 10 seconds. The fifth test, to find out the time required to complete a turning circle using the rudders alone and with all engines at full speed, was effected in 25 seconds. In the sixth the rudders were tested with the motors slowed down to the slowest possible speed—approximately 4 knots—and the boat responded satisfactorily to the helm. Equally satisfactory were the next two tests which were made for the purpose of determining the Sea Sled's ability to hold a course in a seaway at low speed and at high speed.

The concluding test was one for high speed

people for pleasure purposes. It is also interesting to note that as a contrast to the above the Duke of Westminster's famous racer Ursula weighed approximately five tons, and yet with the same horsepower the speeds of the two boats were almost identically the same. Throughout the tests of the Sea Sled it was observed by every one that owing to the design of the hull there was absolutely no sharp pounding even in rough water, and that at no time was it severe enough to threaten any damage to the hull. An inspection by the officials at the conclusion of the tests showed that the armament weights had been carried without any movement or strain, and that the hull was free from leaks or signs of strain.

While the test of 40 miles per hour was made with the motors turning over at 1,400 r.p.m., when the boat was first put over with the motors fully tuned up, two of them showed a speed of 1,525 r.p.m., showing that a higher boat speed is not impossible.

Flag Etiquette

To the Editor of MoToR Boating:

Will you please answer, for the benefit of our members, the following query:

On Sundays and holidays when the Union Jack is flown on the bow staff with a flag officer flying his distinguishing flag at the masthead, where should the club burgee be flown?

G. W. S., Chicago, Ill.

[The flag in question should not be flown on single-masted boats when the Union Jack is up. On boats having two masts, the club flag will be flown at the foremast head, and the Union Jack at the jackstaff forward. Of course, the Union Jack is never flown when a boat is under way. On single-masted vessels the club flag replaces the Jack on Sundays and holidays when the boat is under way, and on boats with two masts the Union Jack is hauled down when getting under way, but is replaced by no flag at all.]

A Modest Texan Writes

To the Editor of MoToR Boating:

I have been very severely stung by the motor boat speed bug, and I am sending you a picture of what the first sting produced—a Hand V-bottom 21 x 5-foot 6-inch runabout, powered with an Emerson six. The boat was built entirely by the writer, and the picture shows her running at about 21 miles per hour. If my pocket was as deep as the speed bug's sting, I would soon have the fastest boat in seven States, but as it is I can only say I believe I have the fastest one in the biggest and best State in the Union—Texas.

R. F. C., Beaumont, Tex.

A Horrible Example

To the Editor of MoToR Boating:

Keep out of the way of the big fellows. The accompanying illustration clearly shows what happens if you don't. Most of the operators of motor boats of to-day have a notion that they have as much right on the water as the big boats; according to law they have, but if they would take into consideration how much easier a small boat can be handled in comparison with a big one in narrow channels, they would give big fellows all the room they wanted. Don't confuse them with your little whistle.

This collision occurred last summer in the upper St. Marys River. The weather was clear and the only excuse for it was in a mixup of passing signals. Had the crew of Nipissing kept clear of the big boat (Canadian steamer Tonic), which could be seen a mile away, and in a channel one-quarter of a mile wide, all would have been well. This is the way it happened: Nipissing, up-bound with a load of lumber camp supplies consisting mostly of hay, was running close to the port edge of the channel. Tonic, down-bound, was just making a long turn around Point aux Pins and running at about 9 miles per hour. Nipissing blew two blasts of her whistle, signifying, of course, that she wanted to pass starboard.

Tonic evidently did not hear the whistle, and when within about one-eighth of a mile blew one blast of her whistle. Nipissing tried to give Tonic her own way and changed her course to starboard, but found out that she couldn't make it and tried to get back. This explains how she happened to get hit on the starboard side.

Nipissing was designed by Carlton Wilby and built by Bossardet, of Detroit, in 1913, and is 58 feet by 12 feet 8 inches by 7 feet, powered with a four-cylinder 7 by 9-inch Buffalo.

J. B. W., Detroit, Mich.

[The moral which the writer of the above brings out is a very good one and one which every motor boatman should keep in mind; that is, give the big fellow the right of way every time, and then no serious accidents will result. Just because you legally have the right of way in your small boat is no reason why you should exercise it to the discomfort of the large commercial boats which cannot

maneuver or turn as readily as most motor boats can.

However, from a legal standpoint the action taken by the motor boat in the above case was wrong and all actions of the motor boat from the first blowing of two whistles up until the collision occurred were contrary to law, and not justified in any sense. It is true that it has become a practice for boats to exchange a two-blast signal and pass starboard to starboard, but this deviation from the law is justifiable only in cases of actual necessity. The custom seems to be well established among pilots to pass on whichever side is more convenient.



What happened to Nipissing when the steamer Tonic mistook her signal and ran her down

and it seems to be considered that the law has been complied with if the side selected is indicated by the appropriate whistle signal. There is no question but that the above is a direct violation of the law, and motor boatmen should bear in mind never to follow this practice when it is possible to act otherwise, even if the merchant marine does. The law in this matter is clearly laid down in the following decision of the United States courts:

"A steamer bound to keep out of the way of another steamer by going to the right has no right, when under no stress of circumstance, but merely for her own convenience, to give the other steamer a signal of two whistles, imparting that she will go to the left unless she can do so safely and by her own navigation, with-

assent? A reply of two whistles to this means nothing more than an assent to this course, at the risk of the vessel proposing it. Such a reply does not of itself change or modify the statutory obligation of the former to keep out of the way as before, nor does it guarantee the success of the means she has adopted to do so."

Hull Leaks Badly

To the Editor of MoToR Boating:

Last winter I bought a boat in process of building near Boothbay Harbor, Me. I installed the new 25 h.p. Erd, four-cylinder, four-cycle, valve-in-head motor. The boat seems too light for the engine, because the craft leaked apparently from the engine's vibration. Besides, I was not pleased by the amount of spray I received in the face when running into a sea head on. My boat's dimensions are—length, 24 feet by a beam of 4 feet 9 inches.

It is decked over for 12 feet with hatches over the engine.

My question is, would a V-bottom model of 24 feet and say 5 to 5½ feet beam be more desirable from a dry standpoint, and from a speed standpoint? While there are rough, choppy seas to be found in Boothbay Harbor, I have little or no occasion to go on the ocean.

J. M. K., N. Y. City.

[We hardly see how it is possible that your boat of last summer was too light for one of the new 25 h.p. Erd motors. These motors are especially designed for this kind of service, and we are of the opinion that had your hull been properly constructed there would have been no trouble from leaking. The proper installation of a motor in any boat is a very serious and important factor, and one which is often neglected.

From the standpoint of dryness we do not believe a V-bottom boat has many points of advantage over the ordinary round bottom hull in a boat of 24-foot length, powered with a 25 h.p. motor. Boats which can show a speed in excess of 20 or 22 miles an hour are decidedly better sea boats when built with a V-bottom, but at speeds slower than this amount the advantages of the V-bottom over the round bottom become less and less pronounced. We have yet to see a hull and power plant of dimensions of yours which is dry in all kinds of bad sea weather. All of them are wet to a greater or less degree, depending somewhat upon the bow sections and amount of flare given to them. As you say that you have no occasion to go on the ocean, we are basing statements upon the conditions of ordinary chop.

We Pass The Buck

To the Editor of MoToR Boating:

For the sake of dear old Anti Monotony as well as

the rest of us won't you inaugurate a movement to persuade boat builders and owners to use just a little more vivid imagination in painting all kinds of pleasure craft? How much longer will our endurance of black and white last? An opportunity is available in New York, at the time of writing, to see the difference between the colors used on cars and boats at the two annual shows. Is there any reason why we should not have dark blues, maroons, and good shades of browns with harmonious stripings and trimmings for our boats? How much more attractive the club anchorages would look with boats painted in this way. Builders are beautifying and improving the inside of the boat to the last degree of comfort and appearance but the outside is the same as it was before the war. If I am in error or in an insignificant minority in this matter, please pardon me for the intrusion.

H. M. H., Boston, Mass.

Teaser, a Hand V-bottom boat, which is reputed to be some little speedster. Her owner, whose letter is printed on this page, modestly proclaims her the best boat in the best state in the Union—Need we name the state?

out aid from the other, and without requiring the other steamer to change her course or speed. Otherwise, she would be imposing upon the latter steamer more or less of a burden, and the duty of keeping out of the way which by statute is imposed upon herself. When two blasts are given under such circumstances the steamer bound to keep out of the way of the other thereby says in effect to the other: 'I can keep out of your way by going ahead of you to the left and will do so if you do nothing to thwart me; do you

New Things For MOTOR Boatmen

Little Giant Lubricator

This is an automatic lubricator manufactured by the Little Giant Mfg. Co., of 542 South Dearborn street, Chicago, Ill., which consists of an oil reservoir containing a strainer and stem with regulating screw, and a spring handle to prevent the screw from moving after the proper adjustment is made. There are also two back pressure valves and a reservoir valve, as shown in the illustration. This automatic lubricator is designed to effect an economy in the use of oil and to reduce the formation of carbon deposits. The construction is such that when the reservoir is filled the oil will not flow until the piston moves, thus creating a suction on the down stroke. This suction opens all the valves at once, but the reservoir valve opens only enough according to adjustment to allow a film of oil to escape, which flows down and forms into a drop falling into the space inside the sight glass. This oil is subsequently vaporized and drawn into the cylinder at the time when it will prove most efficacious. When the down stroke of the piston is complete all the valves become sealed, thus preventing blowing back of the oil-saturated air.

Tenox Liquid Gasket

The Stone Mfg. Co., of 136 Liberty street, New York City, is introducing a preparation which is intended to take the place of asbestos or copper gaskets on a marine motor. Tenox, as it is called, is a heavy liquid of a consistency thicker than molasses, which is applied by brush to the cylinder head or similar part requiring a gasket, this simple process obviating the need of hammering down and cutting out the gasket, as is usually done. It is stated that Tenox fulfills all the requirements of a successful gasket, and that it will not bind the metal parts so that it would prove difficult to separate them when necessary. This liquid gasket is being used by several marine motor manufacturers, who state that it is giving them perfect satisfaction, and it is offered to the retail trade in cans ranging in size from two ounces up.

The L-A Canoe Motor

The Lockwood-Ash Motor Co., Jackson, Mich., is putting out a new inboard canoe motor in single- and double-cylinder models, with the gasoline tank fastened permanently in place to the cylinder casting. These motors have a bore and stroke of $2\frac{1}{2} \times 2\frac{1}{2}$ inches, and the double-cylinder motor is really two units of the single-cylinder machine cast in block. These engines are of the two-cycle type, and in so far as details of workmanship and material are concerned, they are similar in many ways to the popular and widely known L-A rowboat motors. It is declared that installation of one of these motors in an ordinary canoe is a very simple matter, as the crankcase has logs cast on it for adjusting to the bed timbers, and as the outfit is furnished with a bronze plate shaft log which includes stuffing-box and stern bearings, together with a strut for the protection of the propeller. A bronze rudder is also furnished.

Triplex Lens Lights

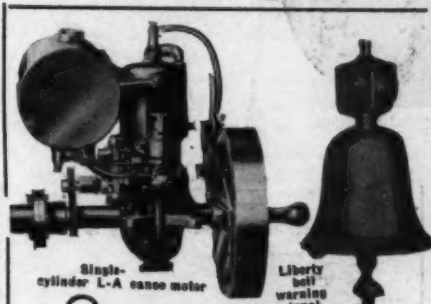
The National Marine Lamp Co., of 254 Pearl St., New York City, manufactures a line of marine lights equipped with this company's patented Triplex fresnel lens light. These lenses are the result of many years' experimenting and are constructed in such a manner that when lighted a very powerful glare of light is produced, which is declared to have 300 per cent greater lighting efficiency than the ordinary fresnel lens. The construction of Triplex lenses is such that there are no low or thin glass parts, the recesses being offset by extra heavy glass on the back or reverse side of the lens. It is stated that when used in connection with an ordinary No. 1 oil burner, these lights can be seen from a distance of four miles, while with proper electric facilities they are visible at seven to ten miles.

Oberdorfer Geared Pumps

The M. L. Oberdorfer Brass Co., of Syracuse, N. Y., manufactures a great variety of bronze gear pumps, one of which is shown in the accompanying illustration. This is an unloader or Type Z pump, designed for installations where a variable quantity of liquid under a constant pressure, or a constant quantity of liquid under a variable pressure, is required. This pump may, therefore, be used for pumping fuel oil to several burners, or for forcing lubrication to several bearings. As in all Oberdorfer pumps, the construction is simple and durable, consisting of the smallest possible number of moving parts. The housing and gears are cast in bronze, and Tobin bronze is used in all shafts in place of steel. Brass screws are used where necessary, so that there may be no rusting or corrosion.

Norma Ball Bearings

With the shutting off of imports at the outbreak of the war, the Norma Co. of America, 1790 Broadway, New York City, at once started to equip a factory of its own for the production of Norma bearings which had hitherto been obtained from Germany. Before the company's stock of imported bearings had been exhausted it began to produce American-made Norma bearings equal in every way to the German product, and since that time the company has been steadily increasing its facilities and output. The Norma ball bearing is pre-eminently a high-speed bearing, its speed qualities being the result of several distinctive features which are—open-type separable construction; rigid mounting of both races; very light ball cage; polar



Single-cylinder L-A canoe motor

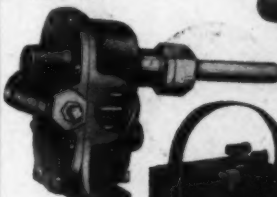
Liberty bell warning signal



Bow light with triplex lens



Hard tuner for use with E. S. A. Co. wireless outfits



Above: Type Z Oberdorfer geared pump



The new Koban motor



A typical Norma ball bearing



Cutaway view of the Little Giant automatic lubricator



Inverting powerlight lamp to show its safety

The Henricks two-light, 40 c.p., lighting outfit



Can of Tenox liquid gasket

guide of balls; extremely high precision and superior finish, and selected materials especially treated.

TWL Storage Batteries

The General Lead Batteries Co., of Chapel St. and Lister Ave., Newark, N. J., manufactures a line of TWL storage batteries for motor boat lighting and ignition. These batteries are made up with thick plates and thick wood separators, with an ample supply of electrolyte. This construction is declared to insure a long-lived storage battery which gives very good capacity at the low discharge rates and at the same time satisfactorily discharges at fairly high rates. The battery consists of rubber jars sealed into a hard wood case, the elements being set into their respective jars and connected up in series with lead burned connections. TWL batteries in the 6-volt type are manufactured in capacities of 40, 60, 90, 120 and 150 ampere hours and range in prices from \$13 to \$30.

Powerlight Lamps

The Powerlight Mfg. Co., of 545 Broadway, New York City, manufactures the Powerlight reading lamp for use on yachts and motor boats. This lamp burns kerosene or gasoline vapor and is constructed without wick or chimney. The mantle which is used is declared to be practically indestructible, while the lamp itself can be upset or rolled around on the floor without danger of explosion. The fuel font has a capacity of one quart, which is stated to be sufficient for twenty hours burning with a light of 335 c.p. Style 404 with 10-inch plain shade is sold for \$9, and with 12-inch Chinese Chippendale shade for \$10.

Henricks Five Light Outfit

The Henricks Magneto & Electric Co., of Indianapolis, Ind., is featuring this year its Eureka five-light outfit, designed for motor boats up to 35 feet in length. This outfit has a capacity of 40 c.p., and the following distribution of the current is recommended—one 12 c.p. searchlight and four 8 c.p. lights. The battery furnished with this outfit, a 6-volt 60-ampere hour type, will alone carry the above lamp load, it is said, for eight hours. The outfit consists of one Henricks Eureka B C 4 ball bearing generator including this company's new automatic cut-out, the storage battery just mentioned, and one 7 x 9-inch special switchboard. This switchboard is of marbled slate and contains one ammeter which shows the rate of charge and discharge, three-button switch with fuses and a special combination pilot and trouble light with ten feet of cord. The cost of the complete outfit is \$55. Other prominent lighting outfits put out by this concern are the 10-light 80 c.p. and the 20-30-light equipment for large motor boats and cruisers.

The Trinity Bell Signal

This is a warning signal which consists of a bell with a penetrating musical tone, having mounted on top of it a small red electric light which flashes when the bell is sounded. The manufacturer states that the bell may be readily heard at a great distance while the red light naturally helps as a warning at night. The signal is operated by an electric button controlling the electric coil which is thoroughly waterproof. This instrument is heavily nickled, is offered in several sizes and is manufactured by the Trinity Bell Mfg. Co., of Chicago, Ill.

The 1916 Koban Motor

The 1916 line of rowboat motors manufactured by the Koban Mfg. Co., of Milwaukee, Wis., consists of three models. The design of the cylinders and crankcase has been so revised as to make the motor four pounds lighter than it previously was. The water-jackets have also been enlarged and the carburetor opening has been moved to the center of the crankcase. The spark plug holes are tapped for A. L. A. M. plugs. Other innovations include an entirely new carburetor which is declared to be extremely efficient, an improved water-tight thrust adjusting gear case; a new water-proof timer; a new design of vibrating coil on the battery model; a larger muffler; a tilting device; an improved arrangement of the steering mechanism, and an easy starting device. The new aeroplane type built-in-the-flywheel magneto on the leading model has breaker points which are encased on the inside of the flywheel, where there is no possibility of their getting out of adjustment or being tampered with unnecessarily.

Wireless for the Motor Boat

The Eastern Scientific Apparatus Co., of Clement Ave. & Kenneth St., West Roxbury, Mass., is now prepared to supply wireless and telephone receiving and transmitting stations for motor boats of any size. This concern manufactures a complete line of appliances used in the construction, maintenance and operation of such outfits for boat and shore use and can equip stations capable of receiving messages from a distance of 5,000 miles and for sending for about 1,000 miles. The company will send radio engineers to any port in North America to install stations, but states that the work can be done to greater advantage in the Atlantic sea ports. With the outfit once installed aboard a boat absolutely no instructions are needed for the operation of the radio telephone, while very little initial instruction is needed with the telegraph installations.

The company points out that time signals, weather reports, baseball scores and general news items may be received with one of its outfits, while private messages can be readily sent and received.



The Little Giant combination light

Little Giant Combination Light

One of the latest devices introduced by the E. J. Willis Co., of 85 Chambers St., New York City, is the Little Giant combination light for use with Class 1 motor boats. This is a brass fixture mounted on a standard which raises it 10 inches from the level of the deck, and it is so designed that when not in use a flagpole may be fitted in its socket. It is furnished complete with a 6-volt 4 c.p. tungsten bulb and has a sliding door at the back to render easy access to the interior. The light complete as illustrated is sold for \$6.95, and the light complete, but without the standard, may be obtained for \$5.75.

J-M Auto Clock

The H. W. Johns-Manville Co., of New York, is manufacturing the J-M Auto clock, which has an eight-day movement and is declared to be a good time keeper, because of its honest and accurate construction from start to finish. The lever-escapement is mounted on large and extra strong pinions to withstand shocks and vibration. The movement is enclosed in a dust- and moisture-proof case with a heavy crystal attached. This unit is in turn carried in an outer case with completely enclosed winding key and attaching screws, rendering these parts tamper-proof. The J-M Auto clock is made for dash or flush mounting and is finished in black and brass, black and nickel or all black. It has a 3 3/4-inch porcelain or silver finish or non-gloss black dial, and is sold for \$5.

The New Kingston Magneto

The Kokomo Electric Co., of Kokomo, Ind., has recently produced a new Kingston magneto known as model L for all sizes of marine motors up to six cylinders. These high tension magnetos are entirely self-contained and do not require a separate transformer coil, batteries or other apparatus for operation. The secondary winding is placed in a water-tight housing above the armature directly beneath the magnets, thus thoroughly protecting it from external injury and moisture. Isolated as it is, it is declared that the high tension current can have no tendency to travel elsewhere than through its intended circuit, which is a positive connection direct to the high tension distributor. Simplicity is one of the features of this magneto and there is but one adjustment, that being in the adjusting screw carrying the platinum breaker point which is clearly visible and accessible when the interruptor cover is removed. The interrupter has but two parts—a cam and a spring. One of the most important features of the Model L is the strength of the current output at extreme retard.

Ideal Primer

The Ideal Brass Works, of 10th and Canal Sts., Indianapolis, Ind., is furnishing the Model E dashboard primer, which is designed to overcome any difficulty experienced in starting a motor in cold weather. This primer, which is attached to the bulkhead, is connected with a feed line and a proper amount of gasoline is injected into the manifold of the motor just before cranking. The stem is threaded and when the primer is not in use a few turns of the handle will close the valve, making it impossible, it is said, for the device to leak, even under pressure. The primer is furnished complete with tubing connections ready to install, and is sold finished in nickel plate for \$3.

Goblet Enclosed Closet

Wm. H. Goblet, of 32 Old Slip, N. Y., is manufacturing the Goblet bronze ball valve yacht closet, which is stated to be a radical departure in marine toilet construction. This toilet is so constructed that aside from the lever handle no moving parts are exposed, while the fixture is notable for the absence of yokes, arms, relief pipes, etc. The pump cylinder has a four-inch diameter, and it is declared that the unusual length of the piston insures perfect alignment of this part at all stages of operation. The piston is hemp packed and as no metal parts bear, all friction is reduced to a minimum. Owing to the bronze ball valve, an exclusive feature, and the other details of design, this pump is declared to operate on the first stroke, while it is guaranteed to pump and discharge a greater volume than any other pump of its dimensions. As the bronze ball valves do not absorb or retain moisture, they make for sanitary perfection.

The Wright Piston Rings

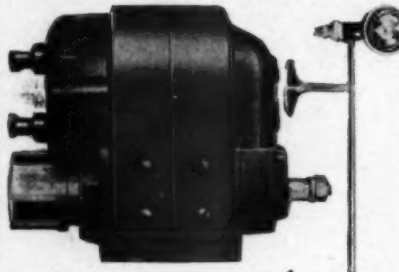
The Wright piston ring, which is manufactured by W. W. Wainwright & Son, of Connorsville, Ind., and is distributed by the V. A. Longaker Co., of Indianapolis, Ind., is made up of two eccentric rings—one laid atop the other—so constructed that when placed in its groove the two slots (cut in opposite directions) must remain permanently separated by about 90 degrees. It is declared that owing to the fact that the two halves of the ring are eccentric, an even pressure for its fitting face is assured. The two pieces come in contact only on a smooth, straight surface, and it is claimed that no condition can arise to prevent their unhampered operation—and expansion independent of one another.



J-M auto clock



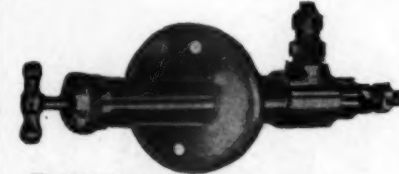
Self-locking hook for picking up moorings



The Kingston Model L-4 magneto



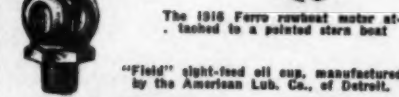
Universal searchlight



The ideal primer



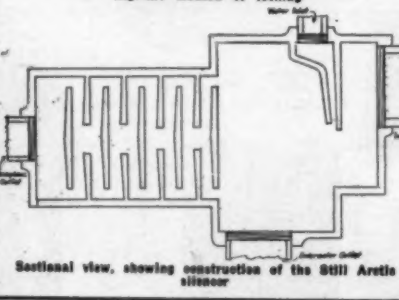
The 1916 Ferro rowboat motor attached to a pointed stern boat



"Field" light-feed oil cup, manufactured by the American Lub. Co., of Detroit.



The component parts of the Wright piston ring, showing the method of locking



Sectional view, showing construction of the Still Arctic silencer



Justrite carburetor

Justrite Carburetor

This is a carburetor manufactured by the Wilcox Armstrong Co., of 182 Beaubien St., Detroit, Mich., whose action is mechanical and automatic, being controlled by the sliding venturi throttle. This is declared to produce a correct, even mixture, giving great pulling power at all engine speeds, and at the same time increased economy and flexibility. The Justrite has no springs or delicate adjustments, and has but one constant air opening, which furnishes the air at all ranges of speeds. Heat can be furnished by running a tube from around the exhaust pipe to the constant air opening. There is but one adjustment and this, for idle running, is easily effected. The carburetor is made in 3/4-inch, 1-inch and 1 1/4-inch sizes.

Self-Locking Mooring Hook

The Holospar Cooperage Co., of Edgewater, N. J., has recently introduced a self-locking mooring hook which can be operated from the deck of any large cruiser for picking up a mooring. It is made with a ring to hook on to any pike pole and it is stated that you can lock the hook instantly for as far as it is possible to reach with the pole. The hook is made of galvanized malleable iron and constructed entirely without springs. Another feature claimed for this hook is that it is impossible for it to come open accidentally. It is sold for \$1.50.

A Universal Searchlight

A new type of searchlight for motor boat use which is declared to have many advantages over existing lights has just been patented by F. C. Howe, of New Haven, Conn., and is being manufactured by the Wood Mfg. Co., of Fairfield, Conn. This light resembles other searchlights in so far as the reflector, bulb, electric connections, etc., are concerned, the difference being in the method of control, which may be readily understood by consulting the illustration. The handle of the lamp is composed of an inner rod operating within a jointed tube which in turn is contained in a tube housing. The rod or inner member extends from a bevel gear at the lamp end to a control knob at the other end. It will be seen that by turning the knob the rod is made to turn, swinging the lamp upon its horizontal axis for a full 360 degrees. However, pressure upon the knob brings into engagement the jointed tube which is a part of the bracket upon which the lamp rests, and by turning the knob while it is so engaged, the lamp is made to revolve upon its other or perpendicular axis for a complete circle. It will readily be seen that a combination of the two movements will give any desired position of the searchlight. The lamp may be placed on the bow of the boat with the operating knob at or within easy reach of the steering wheel, or it may be placed on the top of the cabin with the rod extended downwards. The scope of the searchlight may therefore be said to be universal.

The 1916 Ferro Rowboat Motor

No radical changes have been made in the 1916 model outboard motor manufactured by the Ferro Machine & Foundry Co., of Cleveland, O., but a few minor improvements have been effected. One of these consists of an attachment weighing less than five pounds by which the motor can be used with a pointed stern boat. This is a strong piece of mahogany fitted with two eyebolts that slide over two bolts in the stern and two galvanized brace rods one foot long, extending to an eyebolt on the gunwale on each side of the boat. This attachment is so designed that the motor can be fixed to a pointed stern boat in even less time than to a square stern boat. It can readily be left on either the motor or the boat, and it does not increase the dimensions of the motor. The permanent fittings to the hull offer no obstruction to the use of the rowboat without the motor.

The Still Arctic Silencer

This is a silencer manufactured by the Tracy-Still Mfg. Co., Inc., of Patchogue, L. I., which is designed to eliminate back pressure and vibration by passing the residue gases through and around the plates in the silencer chamber and gradually discharging them to the atmosphere. The silencer is a cylindrical-shaped gray iron casting with an inlet chamber at one end and the silencer chamber at the other. The latter has a head and contains nine plates held together and separated by spacing rods. Four of the plates entirely fill the cylinder and are provided with a central hole; the remaining plates are of diminished diameter. These plates together with the rods are cast integral with the head. The exhaust gases enter the silencer or expansion chamber, passing through a fan-shaped curtain of water coming from the circulating system of the motor, and being cooled and reduced in volume on coming in contact with the water. The main discharge is conducted under water through a pipe at the bottom of the expansion chamber and the atmospheric outlet is at the end of the silencer chamber. The design of the silencer is said to be such that it remains cool enough at all times to be touched with the bare hand. The Still Arctic silencer is offered in three sizes.

Will Motor Boatmen Stand for It?

An Immense Mass of Legislation Introduced in Congress by the Rocking Chair Fleet—Congressmen from the Inland Districts Attempt to Decide the Destiny of the Motor Boat

AS if the worthy solons in Washington had no other affairs with which to occupy themselves during the first session of the 64th Congress, they have seen fit to introduce a flood of bills and resolutions seeking to affect the present status of the motor boat. The most vital of this intended legislation is that having as its purpose the revision of Section 5 of the Motor Boat Law of 1910. This law which is now in effect reads as follows:

"Sec. 5. That every motor boat subject to any of the provisions of this Act, and also all vessels propelled by machinery other than by steam more than 65 feet in length, shall carry either life preservers or life belts, or buoyant cushions, or ring buoys or other device, to be prescribed by the Secretary of Commerce, sufficient to sustain afloat every person on board and so placed as to be readily accessible. All motor boats carrying passengers for hire shall carry one life preserver of the sort prescribed by the regulations of the Board of Supervising Inspectors of every passenger carried, and no such boat, while so carrying passengers for hire, shall be operated or navigated except in charge of a person duly licensed for such service by the local board of inspectors. No examination shall be required as to the condition of obtaining such a license, and any such license shall be revoked or suspended by the local board of inspectors for misconduct, gross negligence, recklessness in navigation, intemperance, or violation of law on the part of the holder, and if revoked the person holding such license shall be incapable of obtaining another such license for one year from the date of revocation: Provided, That motor boats shall not be required to carry licensed officers, except as required by this Act."

Four bills for the amendment of this section of the Motor Boat Act have been introduced, and of these we quote S. 1315 and H. R. 5795. These two bills which are identical were sponsored in the Senate and House respectively by Hon. Knute Nelson and Hon. Clarence B. Miller, both of Minnesota. The bills are as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 5 of an Act entitled 'An Act to amend laws for preventing collisions of vessels and to regulate equipment of certain motor boats on navigable waters of the United States,' approved June 9, 1910, be amended to read as follows:

"Sec. 5. That every motor boat subject to any of the provisions of this Act, and also all vessels propelled by machinery other than by steam, more than 65 feet in length, shall carry either life preservers, life belts, or buoyant cushions, or ring buoys, or other device, to be prescribed by the Secretary of Commerce, sufficient to sustain afloat every person on board and so placed as to be readily accessible. All motor boats, whether propelled by steam, gasoline, fluid of any nature, or otherwise, and whether engaged in the business of carrying passengers for hire, towing for hire, fishing for hire, or carrying freight for hire, or motor boats owned and oper-

ated by any person, firm or corporation in the conducting and carrying of any commercial business or pursuit, shall carry one life preserver of the sort prescribed by the regulations of the Board of Supervising Inspectors for every passenger carried, and no such motor boat, whether engaged in the business of carrying passengers for hire, towing for hire, fishing for hire, or carrying freight for hire, or owned and operated by any person, firm or corporation in the conducting and carrying forward of any commercial business or pursuit, shall be operated or navigated except in charge of a person duly licensed for such service by the local board of inspectors. Whenever any person claiming to be competent to operate a motor boat offers himself for a license the board of local inspectors shall make diligent inquiry as to his character and merits, and said board of local inspectors shall, by written examination, determine whether or not said applicant possesses the required knowledge and skill to carry out the services for which said applicant seeks license, within the district and under such limitations as are set forth in the application. If said board of inspectors, from its inquiry and written examinations determine that said applicant is of such trustworthy character and merit and possesses such requisite knowledge and skill as to warrant the granting of a license, said board shall grant said applicant a license for such a term and within such limits as said board of local inspectors may prescribe in said license; but any such license

may be revoked or suspended by said board upon such terms or conditions as said board may prescribe for misconduct, gross negligence, intemperance, recklessness in navigation, or violation of the law on the part of holder: Provided, That motor boats shall not be required to carry licensed officers except as required in this Act."

Two other bills numbered S. 2226 and H. R. 6801 have been introduced by Senator Atlee Pomerene, of Ohio, and Congressman Wm. J. Carey, of Wisconsin, respectively, duplicating in intent, if not exactly in wording, the bills above quoted. Of these four bills the two introduced in the House have been referred to the Committee on the Merchant Marine and Fisheries, and those presented in the Senate to the Committee on

Commerce, but up to the time of going to press no further action has been taken on them.

Section 6 of the above mentioned Act, entitled "An Act to amend laws for preventing collisions of vessels and to regulate equipments of certain motor boats on navigable waters of the United States" has also come in for its share of attention, and Representative J. A. Gallivan, of Massachusetts, added to the gaiety of nations by introducing the following to the house on February 17 (H. R. 11715):

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 6 of the Act of June 9, 1910, chapter 268, Statutes at Large, volume 36, page 463, be amended by adding 'and shall have its tanks equipped with a device to prevent explosions.' A fine not exceeding \$100 shall be imposed for any violation of this Act."

In pondering over this bill perhaps the Committee on the Merchant Marine and Fisheries to which it has been referred will make it clear whether fresh water, air or oil tanks are meant, as we do not recall ever having heard of the explosion of a gasoline tank. Verily the days of freak legislation are upon us.

Another bill which seems loaded with dynamite and capable of causing the motor boat owner an unlimited amount of trouble and expense is H. R. 9412, introduced by Congressman J. W. Alexander, of Missouri. This bill, which is well worth studying, is worded as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 4426 of the Revised Statutes as amended by the Act of May 16, 1906, is hereby amended so as to read: (a) The hull and boilers of every ferryboat, canal boat, yacht, or other craft of like character propelled by steam, shall be inspected under

Statement of an Official of the Department of Navigation

We have before Congress at the present time three important bills that directly affect motor boats. There is the numbering bill, favored by the Department, and the bill to prevent the overcrowding of motor boats and in the case of motor boats carrying twenty or more passengers for hire, the inspection of the boat and the licensing of the operator after a written examination; but they have another bill in Congress just at the present time—a bill introduced by Mr. Nelson, on request. This bill provides that every motor boat engaged in commercial pursuits of any kind shall carry an approved life preserver for every person on board, and the operator of that boat shall be licensed after a written examination. This is a bill that does not affect directly the United States Power Squadrons, but it has a very material effect on the motor boat business in general.

When the Act of June 9, 1910, was under consideration, the question of having approved life preservers on small vessels was given very careful consideration. It was considered at that time that it would be better not to require approved life preservers, which are large and cumbersome things, on small vessels, for the reason that there would be a tendency to stow them away in inaccessible places where they would not be available in an emergency. In those small boats, if there is an accident, the people are usually in the water in short order. It is an explosion of gasoline, it is a collision or it is something that requires the immediate use of life-saving devices. Buoyant cushions, therefore, were suggested, and the Department, in the administration of the law, has not found any material complaint against efficient buoyant cushions, in the case of vessels not carrying passengers for hire.

But one of the points in these bills is this written examination of the operators of the boats. There are said to be about 250,000 motor boats in the United States. Of this number, our inspection officers estimate that 125,000 are engaged in commercial pursuits. The local inspectors now have more work than they can do. To bring this great number of examinations before them, it would be a physical impossibility for them to hold such examinations. We would therefore have a law on the statute books that could not be enforced.

In the outlying districts, especially in the North and South, and along the Maine Coast, to a considerable extent, and in the western waters, there are many navigators of these boats engaged in fishing and the carrying of farm produce and so forth who cannot read and write. It is estimated that not less than a thousand men would be thrown out of employment, out of the means of livelihood, if that bill should become law. The local inspectors, in many cases, are situated five or six hundred miles from these boats. Therefore, it would be necessary for the owners of these boats to travel this long distance twice, once at the time of application for examination, and the second time at the time of examination. The bill itself, on its face, of course, seems to be a good bill; that is, if a man runs a motor boat, he should be examined to see if he knows how to run a motor boat, if he is going to have any life-saving device on board, or else have the approved life-saving devices. I mention this bill to you, not to raise objections to the bill, but to show how a bill on its face may be a good bill, and a bill which Congress, unless advised to the contrary, might pass; and it seems to me it is well for men who are qualified, to look into these bills, and see what the effect is, not only on the Power Squadrons, who are qualified, to look into these bills, and see what the effect is, not only on the Power Squadrons, but on the motor boat business in general. As setting the standard of navigation and equipment of vessels, it seems to me the Power Squadrons are especially qualified to advise the committees of Congress and to advise the Department as to their views on these legislative matters. I do not refer to a passive approval, I mean that when a bill that is of material benefit or injury to the motor boat business is before Congress or before the Department, we should hear from them.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 4426 of the Revised Statutes as amended by the Act of May 16, 1906, is hereby amended so as to read:

"Sec. 4426. (a) The hull and boilers of every ferryboat, canal boat, yacht, or other craft of like character propelled by steam, shall be inspected under

the provisions of this title. Such other provisions of law for the better security of life as may be applicable to such vessel shall, by the Regulations of the Board of Supervising Inspectors, also be required to be complied with before a certificate of inspection shall be granted, and, unless otherwise provided for by law, no such vessel shall be navigated without a licensed engineer and a licensed pilot: *Provided, however, That in open steam launches of ten gross tons and under, one person, if duly qualified, may serve in the double capacity of pilot and engineer.*

"(b) All vessels above fifteen gross tons carrying freight or passengers for hire, but not engaged in fishing as a regular business, propelled by machinery other than by steam, shall be, and are hereby, made subject to all the provisions of paragraph (a) of this section, relating to the inspection of hulls and boilers and requiring engineers and pilots, and to the rules and regulations established thereunder.

"(c) Every vessel propelled by machinery other than by steam and every steam vessel not more than 65 feet in length from end to end over the deck excluding sheer, while carrying twenty or more passengers for hire, in addition to the inspection already provided for by law, shall be inspected as to the hull and general condition of the operating machinery, and the local inspectors, where certificates of inspection are not now provided for by law, shall issue to such vessels certificates of approval, in accordance with the form and regulations prescribed by the Board of Supervising Inspectors. All certificates of inspection and of approval issued under authority of this section shall state the number of passengers such inspected or approved vessels can carry with prudence and safety.

"(d) The operators of such vessels, except vessels propelled by machinery other than by steam above fifteen gross tons and over 65 feet in length from end to end over the deck excluding sheer, while carrying twenty or more passengers for hire, shall be licensed by the local inspectors of steam vessels after an examination covering knowledge of the rules of the road, ability to distinguish colors, general knowledge of motor engines and machinery and of the navigation of waters in which the vessel is to be used.

"(e) The certificates of approval and the licenses of such operators shall be kept on board while such vessels are carrying twenty or more passengers, and shall be exhibited on request of any officer concerned in the enforcement of the navigation laws.

"(f) If any vessel subject to this section is navigated without complying with the requirements thereof, or carries passengers for hire in excess of the number allowed by her certificate of inspection or of approval, such vessel shall be liable to the United States in a penalty of \$500 for each offense, for which sum such vessel may be seized and proceeded against, by way of libel, in the district court of the United States of the district where the offense occurred, or where such vessel may be found.

"(g) All collectors or other chief officers of the customs and all inspectors within the several districts shall enforce, under the direction of the Secretary of Commerce, the provisions of this section."

With the exception of Mr. Gallivan's ingenious bill all of the resolutions so far quoted above have been aimed by indirection at the motor boat, but now we come to one which lets drive both barrels squarely at it. This bill which may be an administration measure was introduced by Hon. J. W. Alexander, of Missouri, and has caused more indignation and excitement than any of this winter's crop, and no wonder, for it has to do with the registration and numbering of every undocumented motor boat in the United States exclusive of the outboard motor rowboats of less than 16 feet in length—a matter which concerns big and little fellow alike. This bill, numbered H. R. 9411, reads as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That every undocumented vessel operated in whole or in part by machinery, owned in the United States and found on the navigable waters thereof, except public vessels, and vessels not exceeding 16 feet in length measured from end to end over the deck excluding sheer, temporarily equipped with detachable motors, shall be numbered. Such numbers shall not be less in size than three inches and painted or attached to each bow of the vessel in such manner and color as to be distinctly visible and legible.

"Sec. 2. The said numbers, on application of the owner or master, shall be awarded by the collector of customs of the district in which the vessel is owned and a record thereof kept in the custom house of the district in which the owner or managing owner resides. No numbers not so awarded shall be carried on the bows of such vessel.

"Sec. 3. Notice of destruction or abandonment of such vessels or change in their ownership shall be furnished within ten days by the owners to the collectors of customs of the districts where such numbers were awarded. Such vessels sold into another customs district may be numbered anew in the latter district.

"Sec. 4. The penalty for violation of any provision of this Act shall be \$10, for which the vessel shall be liable and may be seized and proceeded against in the district court of the United States in any district in which such vessel may be found. Such penalty on application may be mitigated or remitted by the Secretary of Commerce.

"Sec. 5. The Secretary of Commerce shall make such regulations as may be necessary to secure proper execution of this act by collectors of customs and other officers of the Government.

"This act shall take effect six months after its passage."

That department of the Government which proposed this bill gives as its reason for so doing that at the present time there are a number of motor boats which are not equipped as required by law, and that when these boats are inspected for the required equipment and

found wanting, that there is no provision of the present law by which the inspectors can get the name and address of the offending owner. The inspectors report that some twenty-five per cent. of the owners of motor boats which do not have the full equipment as required by law on board, give fictitious names or addresses. During 1914 according to the report of the Commissioner of Navigation there were 4,838 violations of the motor boat law under the head of "rules of the road," or in other words about one per cent. of the total number of motor boats in use today was found to be wanting in one or more of the many Government requirements. Of this one per cent. we feel sure that if the Department would furnish us with the records we could show that in at least 80 out of every 100 boats found without the full equipment on board, the Government requirements were unjust. Last summer in eastern waters at least, the inspectors must have received instructions to set a record in the number of violations reported. Their method of obtaining this record was most unfair and did not indicate the true condition of affairs at all. For example, in many of the ports which are frequented by a large number of motor boats in the summer season, there was no attempt made at the inspection of other than the motor dinghies, motor canoes and small craft equipped with outboard motors. Many hundreds of owners were fined for not having the Pilot Rules aboard their 8-foot motor dinghies when these were being used for bathing purposes. The same is equally true of 9- and 10-foot skiffs equipped with outboard motors which were being used in waters scarcely knee deep and which before the advent of the outboard motor a couple of seasons ago, were the home of the flimsy canoe and leaky sharpie. The law does not recognize the fact that this type of boat which has now replaced the canoe and small rowing skiff is many times safer. No life preservers, fog horn, fire extinguisher or pilot rules are required on the canoe or rowboat or even on the sailing craft which is far more dangerous, not only to its own occupants but to other craft afloat. Hundreds of violations on this type of craft were reported for the sole reason of making a showing. Motor boats of a size on which a fire extinguisher, life preservers, Pilot Rules, etc., would be of use, were absolutely overlooked by the inspectors in many of the ports last summer and the owners of the small pleasure craft were made to pay fines of \$5 up, not to mention the time it took to furnish the Department with many affidavits and legal documents which the Department required of the owner if he wished to have his fine reduced from \$200, \$300 or \$500 as the case might be. The use of Pilot Rules on an 8- or 10-foot motor dinghy is of course a joke, but many owners were subjected to a fine for this violation. We grant that the department was within its rights acting as it did, but we believe that it was unfair discrimination.

Again we have in mind the case of a prominent member of the Albany Yacht Club who cruised on Long Island Sound last summer in his 36-foot motor boat, towing a wee mite of a motor tender hardly visible without the aid of glasses. This motor boatman foolishly enough ventured to use his tender one day to navigate certain waters which were hardly deep enough to permit the use of his larger craft, and a wide awake inspector got him when he ran alongside of a float. No fire extinguisher was found aboard this miniature craft, but after due apologies the inspector allowed him to go his way, the owner naturally thinking the matter was at an end. However, several months later after he had returned to his home town, this owner, who was honest enough to give his true name and address at the time of the inspection, received a letter from the authorities stating that he was subject to a \$100 fine, and if he desired to have this reduced he should make application for a reduction, sworn to by a notary, etc., etc. The owner did as instructed and no more was heard of this important transaction for several months until one day in the middle of winter the United States marshal appeared on the scene and informed him that his 36-foot cruiser in winter quarters had been libeled for his failure to pay the \$100 fine. The marshal could not explain what right he had to libel the larger boat which had not violated any Government regulation, or why no attention had been paid to the owner's request to have the fine reduced. Undoubtedly he will be given a chance to explain before the fine is paid.

Local customs officers also made themselves very obnoxious in many localities last summer. In one instance a customs officer assigned to a certain post on Great South Bay not having the heart to tackle the job of inspection in his own waters, journeyed overland to Huntington on the north shore, donned his overalls, hired a skiff and proceeded to make things miserable for motor boats at anchor. One of the first craft to which he came alongside was equipped with a Klaxon horn as its sound signaling device, well within the law, we understand, but this officer ruled otherwise and informed the owner that he was subject to a fine. The owner's request for the officer's name and address was refused as was any sign of authority from the officer. If this particular owner had not known as much about the Pilot Rules and Government requirements as the inspector did himself, he might have paid the fine long before now, but he decided to go the limit to locate the name and address which was refused him by the inspector. To get this information it was necessary to do a little detective work. He closely followed the inspector in his work through the day and when he boarded a trolley car for home a few hours hence the motor boat owner occupied a seat in the trolley car also, where he could keep a close watch upon this inspector. When the other side of the island was reached, it was only necessary to shadow the inspector for a few minutes in his own home town before the motor boatman came across someone who could give him the former's name and address. This data was kept at hand until the notice of the fine came along, and then the true facts were transmitted to Washington. Probably long before now this inspector has received his just deserts.

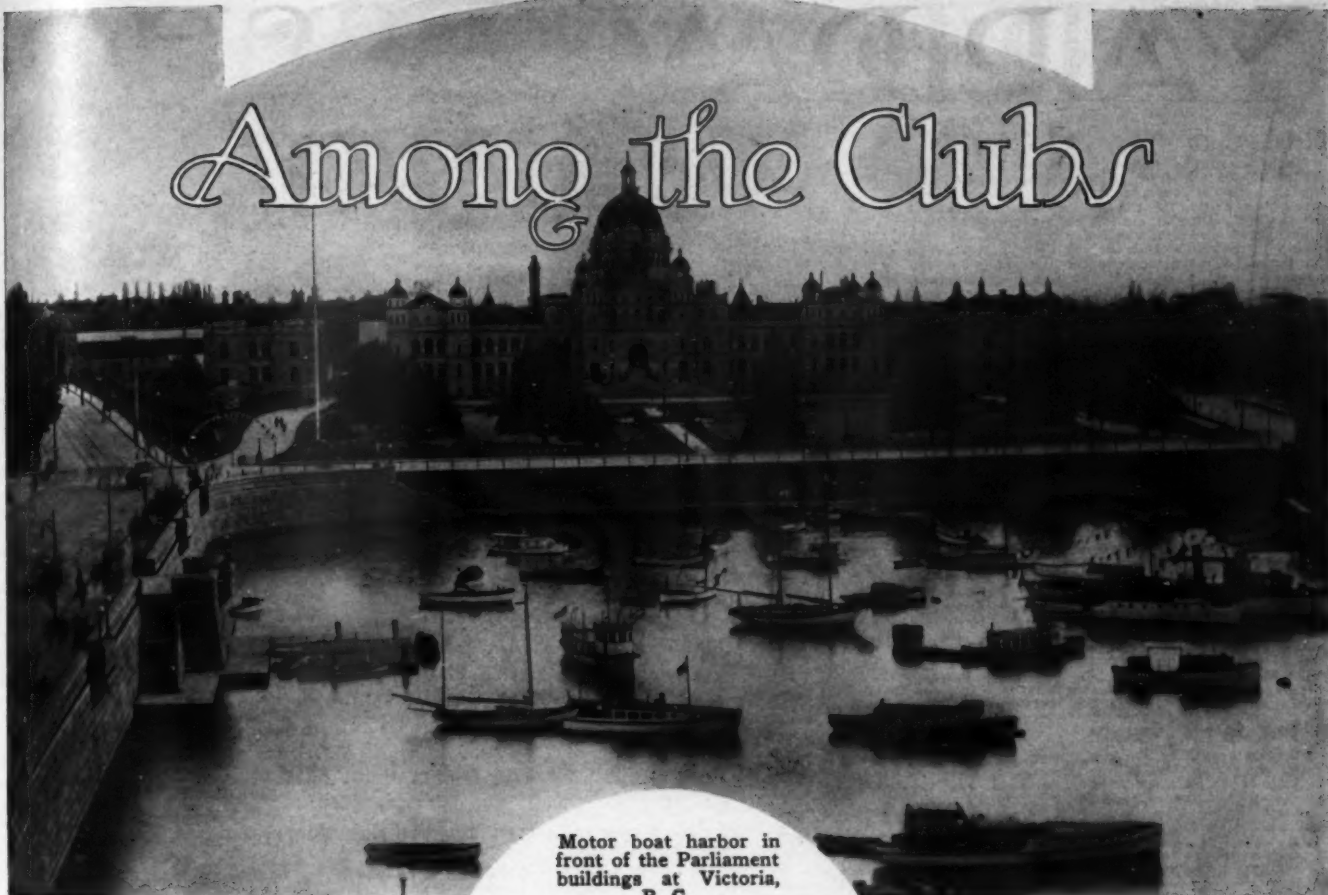
In the above two instances when the facts were reported to the Department of Navigation in Washington, the Department adjusted the cases to the satisfaction of the motor boatmen. We do not doubt that the Department is endeavoring in every way possible to co-operate with the motor boatmen of the country, but we do feel that their machinery in its present state is unworkable and if further enlarged as the result of the numbering bill that conditions will be vastly more chaotic than at the present time.

If the Government wishes to number the boats navigating the Federal waterways, why restrict it to the motor boats under 65 feet in length? Why not include every steam craft, both pleasure and commercial, as well? Would it not be a much better plan instead of placing 3-inch numbers upon the bow of the boat, which is impractical from every standpoint, to have the number firmly fixed to some part of the interior of the hull itself, or on some permanent part of the boat, either by carving or branding? This would not only do away with the disfigurement of the outside of the boat, which is objected to by a large number of yachtsmen, but would prevent any malicious changing or falsifying of numbers attached to the bow, and would be as valuable to the department in the case of giving fictitious names and addresses for violations of the equipment law. To ascertain whether the boat has the full equipment on board, it is necessary for the inspectors actually to board the craft, and it is as easy for them to ascertain the number if it is permanently burned or carved to some part of the interior, as it would be for them to hang over the sides and try to find the 3-inch number on the bow.

In addition to all of the above proposed legislation which may be considered prejudicial to the best interests of the body of motor boatmen at large, there have been several bills and resolutions introduced which, if carried, might be of decided benefit to them. One of them, H. J. Res. 148, a joint resolution introduced by Hon. J. H. Moore, of Pennsylvania, provides for the appointment of a commission to consider the need of and to report a plan for the revision of the navigation laws of the United States. Three bills numbered H. R. 10417, 10500 and 12198, have to do respectively with the creation and establishment of a Merchant Marine Commission, a United States Shipping Board, and a Board of Maritime Control. While of interest these bills do not vitally concern the small boat owner.

One bill, however, which should have a very acute interest for every motor boat owner is S. 3521 introduced by Senator Benj. R. Tillman, of South Carolina. This provides for the establishment of a United States Naval Reserve which shall be divided into five classes, Class D of which includes motor boat owners and operators.

Among the Clubs



Motor boat harbor in front of the Parliament buildings at Victoria, B. C.

Chesapeake Bay Activities

At a meeting of the Chesapeake Bay Racing Association held January 8, at the Hotel Emerson, Baltimore, the officers for the approaching season were elected, and elaborate plans for the summer cruise of the association were discussed. Also, the association was augmented by another club, when the application for membership of the newly founded Sherwood Forest Boat Club was favorably passed upon and the infant club was admitted as the seventh club in the parent body.

The seven clubs comprising the Chesapeake Bay Racing Association are the Baltimore-Corinthian Yacht Club, Chesapeake Bay Yacht Club, Cambridge Yacht Club, Sherwood Forest Yacht Club, of Round Bay, and the Cyprian and the Corinthian Yacht Clubs, of Washington.

After a lapse of several years a vigorous and general interest in yachting has been re-awakened in Maryland. Partly responsible for this new stimulus to the game is the publicity given to the long agitated question of moving the boat club to Fort McHenry. Many boats were built in Baltimore last year and in nearly every instance the owners have become affiliated with one or more of the local clubs. The yachtsmen are, therefore, anticipating a season surpassing in the number of events and the number of boats entered that of any previous year.

The date for the annual cruise of the association has been set for the week beginning July 23. When the application for membership of the Sherwood Forest Club was received it also contained an invitation to the association to participate in a regatta to be held by the Sherwood Forest Club at Round Bay on the Severn River, where the new club is located. It was accepted at once and when the fleet assembles at the Baltimore Yacht Club at the start of the cruise, it will set a course for the capital city and the first race of the week will be held almost in the shadow of the United States Naval Academy.

On July 25 the squadron will run to Tilghman's Creek and on the 26th the Chesapeake Bay Yacht will hold its annual regatta for the first time in years in Easton Bay. The racing will be followed by a reception given by the local club. The 27th will be taken up in the run to Cambridge and on the 28th the Cambridge Yacht Club will hold its annual regatta and reception.

American Power Boat Association Year Book Out

The American Power Boat Association Year Book for 1916 has just been issued and is the most attractive publication which this association has ever published. Several new features have been introduced in the year book which will tend to make it more valuable than ever to the member-clubs and all other motor boatmen interested in racing or cruising. The year book contains the latest official rules of the association for racing and measurement, deeds of trust and rules governing the Gold Cup and One Mile Cup contests, a list of officers of the sections and clubs, valuable formulae, tables of time allowances for handicapping motor boats of all types in racing events, tables of decimal equivalents, areas of circles, comparison of knots and statute miles, piston displacement, time and speed tables, etc. There is also a complete list of measurers, surveyors and timers in this country who may be called upon at any time to officiate at any racing event held by any club in the country. The services of these officials may also

be had by individual persons for the purpose of obtaining authentic and recognized data relating to any of the branches of motor boating.

One of the new committees of the American Power Boat Association is the central committee on aids to navigation, appointed to be of service to any club in the A. P. B. A. Its object is to obtain from the Government additional aids to navigation wherever necessary and this committee has recently sent out a circular letter to all clubs in the American Power Boat Association explaining its work and offering to be of assistance whenever possible. The letter states that before Government officers will place any aid, they require that some real purpose will be served for a reasonable number of craft navigating the water in which it is to be placed, and therefore the committee is compelled to necessitate that every application for the establishment of a light, buoy or other aid should be made in the following manner:

1. A government chart must be submitted with the approximate position in which the aid is to be placed, plainly marked thereon.
2. The application must contain a general description of the aid desired and also sufficient reasons for its necessity.
3. It is well to include in the application all information pertaining to commerce that is obtainable, such as character, number, tonnage and cargoes of the commercial vessels using the waters in which the aid is requested.

4. Any other information that can be given to the committee will be deeply appreciated and it must be understood that the Federal government requires some good reason as to the necessity of the aid requested before the application will be passed upon.

Another new committee of the American Power Boat Association is the advisory technical committee whose duty it is to give technical advice of any description to association members, such as advising as to the proper design of hull or power plant, selection of the proper propeller, or giving information on other similar subjects.

The Racing commission of the association will, as heretofore, be of service to all members to assist and aid them in their racing events and to interpret and explain the rules whenever any doubt exists. All the above is in line with the plan of the A. P. B. A., adopted at its last annual meeting to greatly broaden its scope and include all branches of the sport. Heretofore their efforts have been mainly directed toward racing, but from now on all branches of motor boating will be given equal attention. There is no good reason why every reputable motor boat club or yacht club in this country should not be a member of the A. P. B. A. and help to boost, not only the parent organization, but the sport of motor boating in general. A. L. Judson, care of The Hotel Plaza, New York City, is president of the A. P. B. A.

Waterway League of Connecticut

The first annual meeting of the recently organized Waterway League of Connecticut was held on Feb. 8, 1916, at the Pequonnock Yacht Club, Bridgeport, Conn., when the following officers were elected for the coming year: President, Frank Elliott, ex-commodore Pequonnock Y. C., of Bridgeport; 1st vice-president, Wm. S. Pardee, ex-commodore New Haven Y. C., New Haven, Conn.; 2nd vice-president, M. Suydam Cornell, Jr., Middletown Y. C., Middletown, Conn.; treasurer, Henry B. Beardmore, Pootatuck Y. C., Stratford, Conn.; secretary, John R. Gebhardt Mohawk Y. C., Bridgeport, Conn.; Board of

governors, Wm. N. Brown, Pequonnock Y. C., Theodore N. Palmer, Pootatuck Y. C., Wm. S. Pardee, New Haven, Y. C.

The objects of the league are stated as being the mutual protection and welfare of motor boat owners throughout the state, and from the interest shown so far the association promises to be strongly supported by the various clubs in the state. Membership is open to anyone who desires to join, with practically no restrictions; members of recognized yacht clubs are elected upon presenting their cards immediately, and clubs can take out club membership cards which entitles each club so doing to a representative on the Board of Governors. Great credit must be given ex-commodore Frank Elliott, of the Pequonnock Yacht Club, of Bridgeport, for his persistent efforts to form such a league. He has noted the benefits obtained by boat owners in other states through the agency of such associations and has finally got the support and interest of Connecticut yachtsmen to start the league. Others who have done valiant service in the early start of the league include ex-Commodore Wm. S. Pardee, of the New Haven Yacht Club; M. Suydam Cornell, Jr., of the Middletown Y. C., one of the Connecticut River's foremost enthusiasts, aided and abetted by C. W. Marble, of the same town. John K. Murphy, of the New Haven Yacht Club, finds time from his activities in the U. S. Power Squadrons to attend all the meetings and proffer valuable advice, while the newly elected treasurer, Henry B. Beardmore, of the Pootatuck Yacht Club, of Stratford, Conn., keeps the town awake with his earnest appeals for members and interest.

There is already a feeling that if any legislature affecting boat owners is introduced at Hartford, and it is not of the kind that is wanted, a united and strong voice of protest can be, and will be, heard from the league and its members.

New Power Squadron on the Delaware

The Delaware River yachtsmen have recently perfected the organization of a local squadron of the United States Power Squadrons, to be known as the Delaware River Power Squadron and membership in same is to be open to motor boatmen located on the Delaware River or any of its tributaries between Trenton and Cape May. Some 200 enthusiastic motor boatmen have already enrolled and expressed their intention of taking the squadron examination. Instruction classes are now being held every week in the Delaware River clubs preparing the men in the various subjects with which they must be familiar before they can receive the squadron certificate or have the privilege of flying the Power Squadrons ensign. Dr. Eugene Swayne, of Philadelphia, has been elected temporary commander, H. G. Eastburn, of Wilmington, temporary lieutenant commander, and Charles Hieber, treasurer, and William O'Donnell, secretary.

Independent Club Elects

At a meeting of the Independent Motor Boat Club of New Bedford, Mass., held January 16, 1916, the following officers were elected for the year 1916: Commodore, Charles F. Macomber; vice-commodore, Wm. L. Pierce; rear commodore, Wm. A. Johnson; secretary and treasurer, Charles F. Johnson; Regatta Committee, C. F. Macomber, Charles F. Johnson, James A. Wallace, Wm. L. Pierce and Squire E. Crapo, Jr.; Entertainment Committee, L. J. Parsons, Harry A. Francis, Wm. L. Pierce, Robert L. Broadbent and Albert H. Pollock.

(Continued on page 56)

YARD AND SHOP

Mullins Craft

Much water has passed under the bridge since Jerome K. Jerome wrote his "Three Men in a Boat," and it is to be doubted that the story would ever have been written if the author had waited until now before getting it out of his system. For they build boats nowadays which don't leak as did that of his three heroes and engines that don't balk as did theirs. One of the pioneers in turning out efficient outfits was the W. H. Mullins Co., of Salem, O., and twenty years in the production of steel boats has taught these manufacturers not a little, so that not only do they keep their factory busy supplying the boat fans with small craft, but they are doing this and guaranteeing their product for speed—and for life.

Three features of Mullins craft which are declared to appeal most to the motor boatman are: One, a steel hull that has greater resistant qualities than oak planking an inch thick, two, two- and four-cycle engines of the most approved type tried out in the hull in the water and thoroughly tested for speed, power and correct installation before shipment; three, greater speed, because of the smooth steel sides of the hull which offer less resistance to the water. So successful has the company been with its steel construction, its designs by Whiteley and others, and its Sterling, Ferro, Kermath, Pierce-Budd and Universal motor installations, that the company has been able to build up a line which includes practically every want of the prospective small-boat owner, and it is said that Mullins will ship on the day an order is received any boat of given speed and dimensions from a 16-footer to a 26-foot water automobile.

The newest Mullins product is the 14-foot steel boat designed and built especially for use with out-board motors. This boat is built with the thoughtfulness and care which has characterized the production of the 60,000 Mullins boats now in service.

A Buffalo for Norway

Henig Arnesen, of Kristiania, Norway, Secretary of the Norwegian Motor Boat Association, was sent to America recently with instructions to buy the best engine possible, regardless of price, to power a 40-foot cruiser, which one of the members of the association was building. He reached the United States while the New York Motor Boat Show was in progress and carefully looked over all the leading engines. After he had done so he quietly placed an order for a 40-60 h.p. Buffalo cruiser and run-about engine, which is now on its way to Norway. Besides being Secretary of the Norwegian Motor Boat Association, Mr. Arnesen is editor of "Motorbaat,"



Sea Wolf III, a new cruiser building for Roy Moody, designed by Kromholz

Hacker has been engaged in the designing and building of motor boats. A few years ago he concentrated particularly on racing boats and all followers of the sport are familiar with the Kitty Hawk series, particularly up to Kitty Hawk V, which were some

And now comes a cablegram from Adelaide, Australia, from a Mr. Rymill, who has just driven to success Tortoise, a 26-foot seagoing plane, designed about a year ago and powered with a type E Special eight-cylinder Van Blerck motor. This was a 40-mile



The Mullins 26-foot auto boat which embodies the latest refinements



The 16- or 18-foot Mullins launch for the smaller lake or river

the leading Norwegian publication in the motor boat field. His photograph is shown on this page.

Hacker, Designer of Boats

The accompanying picture of John L. Hacker, vice-president and designer of the Albany Boat Corporation, brings to mind some very interesting developments of the modern high-speed boats. For about twenty years Mr.



A Mullins 5-inch-draft tunnel stern boat, which, like the other models is made in wood or steel

race and Mr. Rymill was very much delighted with the result.

Most of the men who have concentrated on racing boats in the past have done so to their financial sorrow, and Mr. Hacker has been no exception to the rule. But after he went into partnership with L. L. Tripp, of Albany, it was agreed that he would keep out of the racing game, and they have

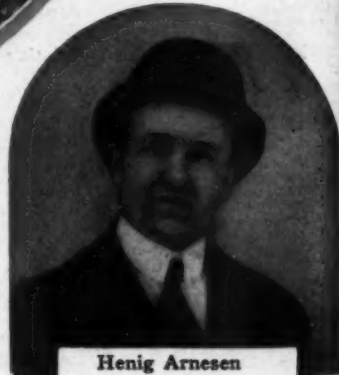


John L. Hacker

of the most consistent and speedy boats per horsepower ever built.

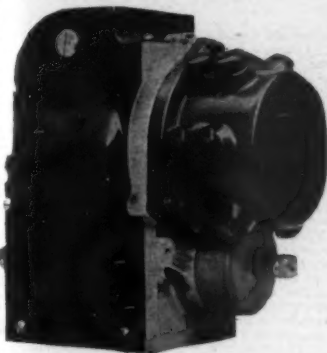
Oregon Kid and Oregon Kid II, of Pacific Coast championship fame, will also be remembered, as these are still said to be the two fastest boats per horsepower that have ever been built.

Other wins for Hacker-designed boats were the Mississippi Valley championship and the Canadian championship made during those racing years by Jovial, as well as the Asiatic championship won by Cloverleaf at Manila, and the championship of Denmark, Norway and Sweden, won by Elsie IV.



Henig Arnesen

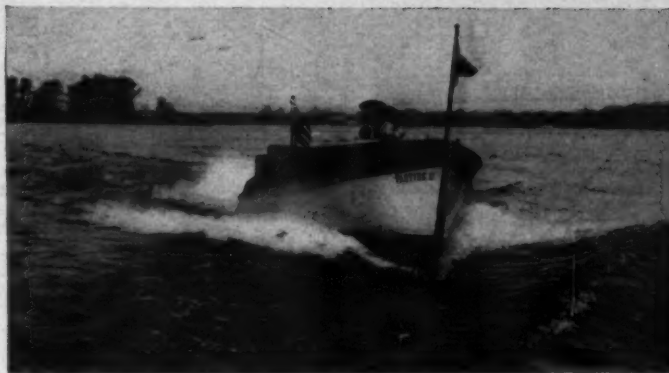
worked up a truly splendid business in the fast, luxurious runabouts. The Albany Boat Corporation has been catering to a class of particular buyers and these men are to be congratulated at the success that has attended their efforts as evidenced by the number of repeat orders from their customers. Some of the old itch for the racing boat has begun to appear this year, however, and we understand that several advances have been made at reasonable



Sumter magneto, capable of 12,000 sparks per minute

The Dunn Divinhood Publicly Tested

At a recent exhibition at the Grand Central Palace the Dunn Divinhood, which is distributed in the United States and Canada by C. D. Durkee, of 2 South St., New York, was thoroughly and successfully demonstrated for the benefit of the boat-owning public. Several prominent swimmers of both sexes as well as many boys and men who were anxious to test the merits of the device with a view to purchase for use on their motor boats took advantage of the opportunity offered, and, putting on the Divinhood, remained under water for periods up to



Pastime II, a 25-foot Niagara displacement model powered with a 25-35 h.p. Peerless motor. Although the hull weighs 2,500 pounds, the Peerless, turning a Hyde propeller at 1,000 r.p.m., drives it at a 24-mile rate



A seaworthy 17-foot family launch having a capacity for seven persons—made by the Cape Cod Power Dory Co., of Wareham, Mass.

prices to induce the Albany Boat Corporation to build some racing hydroplanes for the bigger speed events of the year, and the speed fans are in hopes that Mr. Hacker's efforts may again be available for some extra fast craft for 1916. It is authoritatively stated that a mile a minute will be the minimum of these new boats under consideration.

12,000 Sparks a Minute

Twelve thousand sparks a minute—200 a second, each invariably on time, but that time variable without affecting the intensity of the spark—such are declared to be the capabilities of the new No. 120 Dixie magneto which the Sumter Electrical Company, of 1413 Michigan Ave., Chicago, Ill., is offering for twelve-cylinder marine motor ignition.

Sumter engineers attacked the problem of delivering 12,000 sparks a minute from a single armature, using the newly discovered and developed Mason principle as a working basis, and on this basis a truly wonderful machine has been constructed. The chief features cited for it are its efficiency at low speeds, due to the unvarying simplicity of construction in which there is no moving coil; the unfailing correctness of the spark time and intensity; the dependability; the

half an hour. These voluntary demonstrators sat, kneeled or lay on their backs at the bottom of the tank, proving in every way the practicability of the Divinhood for making repairs to motor boats. These Divinhoods are now being used by the Government for placing piles and for dock building and it is stated that it will be only a matter of time before every mo-

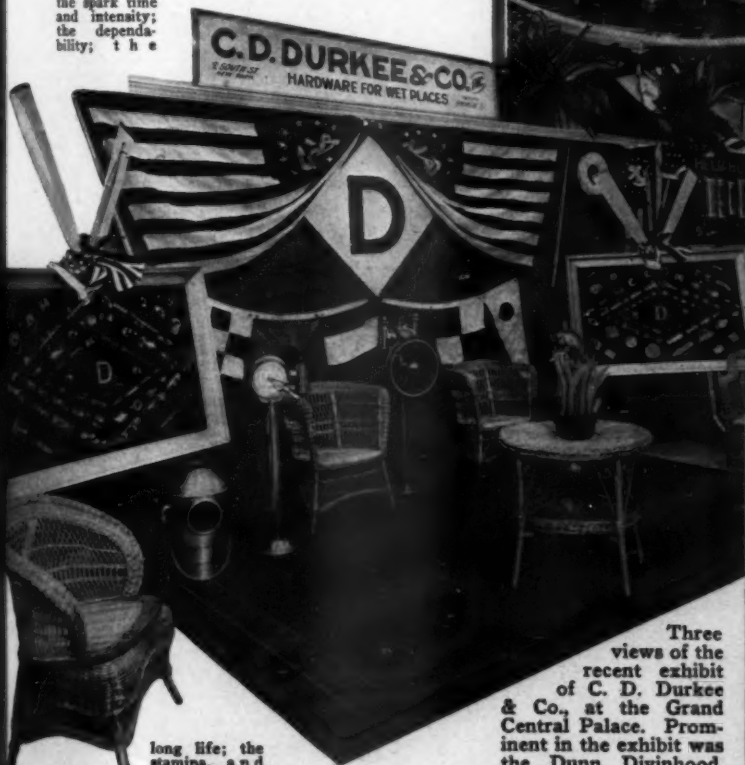
tor boat club is similarly equipped for effecting under-water repairs to the units of the club fleets.

Old Glory II to Do It Again

It has been recently announced that George P. F. Bonnell is going to repeat, in his Old Glory II, the famous cruise which he made from New York to Digby, N. S., in 1912, about which he wrote so entertainingly in the December, 1912, and January, 1913, issues of MoToR Boating. It is further rumored that one who has done some remarkable cruising stunts on his own hook, but who shrinks modestly from the faintest sort of publicity will accompany him. On this extensive trip the boat will be equipped with a four-cylinder Model HB Series B Scripps motor, developing 27 to 36 h.p. It is declared that Mr. Bonnell is, therefore, leaving motor troubles out of his calculations in planning his itinerary.



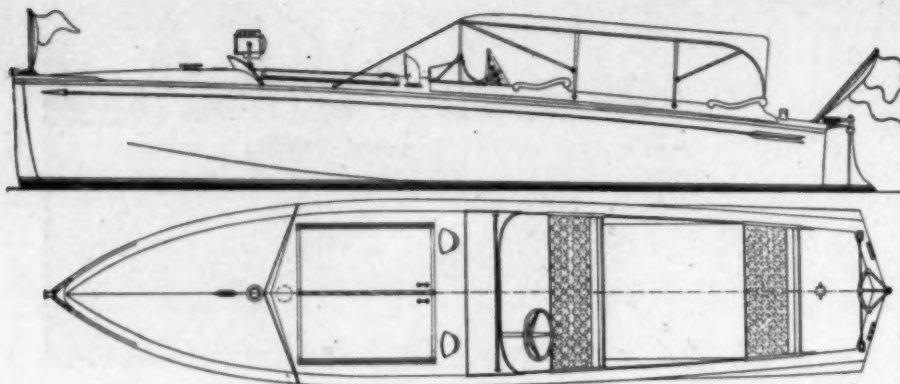
Flags, Crescent yacht ranges, and Klaxon horns figured prominently in the Durkee exhibit



long life; the stamina, and the broad guarantee backed by efficient service.

Three views of the recent exhibit of C. D. Durkee & Co., at the Grand Central Palace. Prominent in the exhibit was the Dunn Divinhood, shown in the lower left hand corner





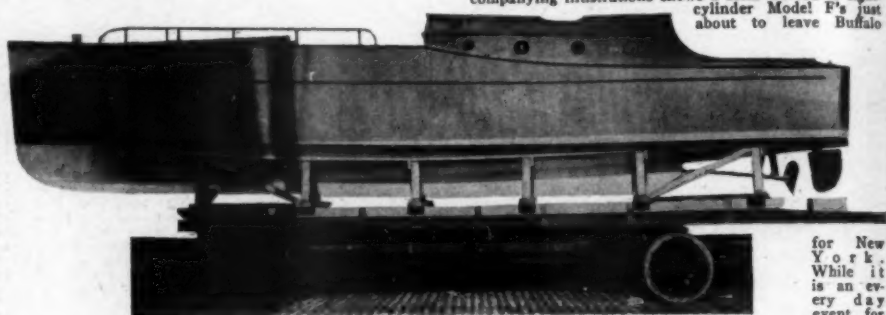
Lines of the Ackley 25-foot seagoing runabout. This is a V-bottom model which makes 25 m.p.h. with a four-cylinder Van Blerck motor

News from the Great Lakes Corporation

In the contract awarded by the Government to the Great Lakes Boat Building Corporation, of Milwaukee, Wis., for the 75-foot survey cruiser Chicago, a four-cylinder heavy-duty 100 h.p. Buffalo gasoline engine has been specified. Chicago is now under construction in the yards of the Great Lakes company, and while six months is allowed in the contract for its completion, it is expected that it will be ready for service by July 1.

William Gilbert, President of the Buckeye Foundry, of Cincinnati, has placed an order with the Great Lakes company for one of its standard model, 40-foot, V-bottom, military type express cruisers, for April delivery to the Thousand Islands. The Gilbert boat, powered with a six-cylinder Van Blerck, will be a duplicate of the famous Pegasus, which won the Western Cruiser Championship at the Hannibal Regatta of the M. V. F. B. A., and a duplicate of the boat built by the Great Lakes company, through its constituent Saint Louis Yacht and Boat Co., for Alfred L. Du Pont, of Wilmington, Del.

These popular models have the outward appearance of a small war vessel; and have most inviting accommodations, including a well-equipped galley and main



The 43-foot Speedway military type express cruiser loaded for its trip to the recent Motor Boat Show

for New York. While it is an every day event for a motor boat company to ship their

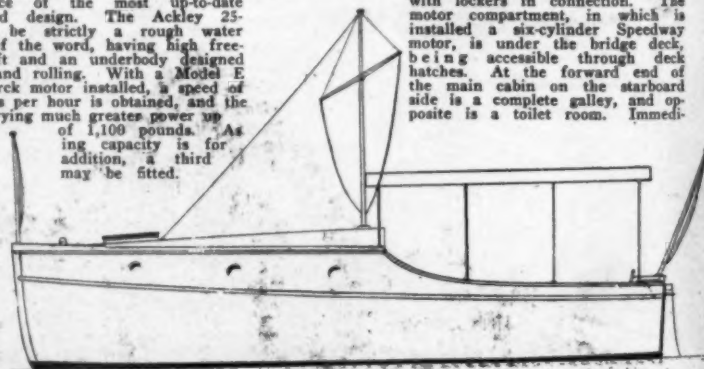
product by the carload and even by the train load, this is declared to be the first instance in which a large, high-grade marine engine has been shipped in such quantities.

U. S. Buys Buffalo

The United States Government has ordered a four-cylinder 10x12-inch Buffalo heavy-duty engine to be installed in the 75-foot motor survey cruiser, Chicago, which will be under the command of Lieut.-Col. William D. Judson, engineer in charge of the Chicago district. The sale was made by Sales Manager A. C. House in spite of unusually strong competition.

The 43-Foot Speedway Military Express Cruiser

One of the accompanying photographs shows the 43-foot military express cruiser built by the Gas Engine & Power Co., and Chas. L. Seabury Co., Cons., of Morris Heights, N. Y., mounted on a truck on its way to the recent Motor Boat Show. This attractive cruiser has a beam of 9 feet and a draft of 3 feet, and is arranged with cabin forward, bridge deck amidships, main cabin aft and a roomy afterdeck. The toilet is in the bow, immediately aft of the chain locker and is equipped with closet, wash basin, towel rack, soap dish, mirrors and clothes hooks. The forward cabin is arranged with berths for two people, with lockers in connection. The motor compartment, in which is installed a six-cylinder Speedway motor, is under the bridge deck, being accessible through deck hatches. At the forward end of the main cabin on the starboard side is a complete galley, and opposite is a toilet room. Immedi-



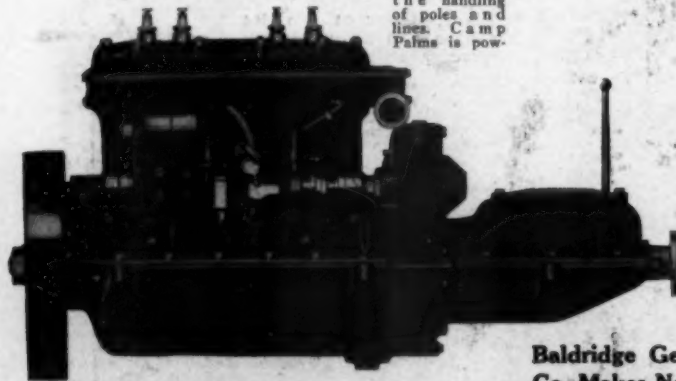
Shipping the Sterling Model F "heavy-duty speed" model in carload lots from the factory at Buffalo

cabin forward, an attractive bridge deck to which all controls are carried, comfortable quarters for the owner, with large clothes press and fully equipped lavatory, and a most inviting cockpit in the stern. These boats, which are heavily constructed for rough water, are stated to develop 18 m.p.h. with 100 h.p., and to have complete and attractive accommodations for a cruising party of eight. Being standardized, they are sold at a very attractive price, notwithstanding that they are built to high standards.

The 36-foot modified V-bottom express cruiser Camp Palms, building by the Great Lakes company, for J. C. Wright, of Roanoke, Ala., for use on the Gulf, is nearing completion. This new stock model of the Great Lakes company has an owner's stateroom forward with two built-in beds and lockers under a well-equipped lavatory and galley, and a main cabin in which two Pullman car sections are practically duplicated, together with a most attractive cockpit, fully protected by an awning, with special facilities for the handling of poles and lines. Camp Palms is pow-

about, plans of which are shown on this page. This boat has a beam of 5 1/2 feet to a draft of 1 foot 3 inches, and is of V-bottom construction. Its lines are graceful, with a pretty flare forward and tumblehome aft, giving an above-water appearance of the most up-to-date practice in high-speed design. The Ackley 25-footer is stated to be strictly a rough water boat in every sense of the word, having high freeboard forward and aft and an underbody designed to prevent pounding and rolling. With a Model E four-cylinder Van Blerck motor installed, a speed of approximately 25 miles per hour is obtained, and the boat is capable of carrying much greater power up to a weight limit of 1,100 pounds. As illustrated the seat capacity is for six persons, and in thwartship seat

ing capacity is for addition, a third may be fitted.



Port side of the popular Gray four-cylinder Model D Jr. The two-cylinder model of the same type is described on page 30

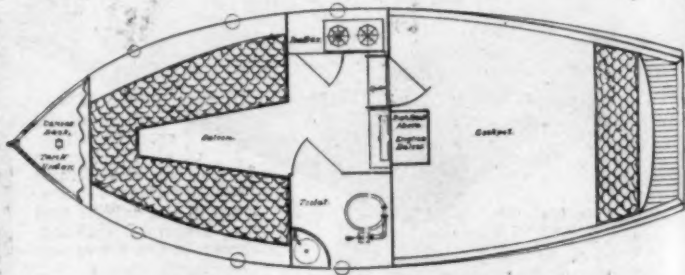
ered with a four-cylinder, medium-duty Sterling, for a speed of 15 m.p.h.

Ackley 25-Foot Seagoing Runabout

The Ackley Boat Building Co., of Cincinnati, O., feels particularly proud of its 25-foot seagoing run-

Baldridge Gear Co. Makes New Connection

Bruna, Kimball & Company, of 115 Liberty St., New York City, and the Bourne Building, Philadelphia, have recently been appointed as eastern represen-



Plans of a 21-foot day cruiser built by Lee H. Harris, of New York. Full headroom is obtained in the cabin

ately aft of this section are the Pullman berths which are arranged to sleep two persons. The construction of this cruiser is of the finest throughout and the furnishing and equipment is in keeping.

Comfortable 21-Foot Cruiser

Under construction at the present time by Lee H. Harris, of 143 West 40th St., New York City, is a very comfortable 21-foot cruiser, which is illustrated in the plans on page 40. This cruiser has a beam of 8 feet and a draft of 2 1/2 feet. Owing to the wide beam it has been possible to give full headroom in the cabin, something which, it is stated, has not been accomplished before in cruisers under 28 feet in length. The design also permits the installation of a commodious lavatory and galley. A 16 h.p., four-cylinder, four-cycle Morton engine, giving a speed of eight miles, will be installed. This boat has been designed to meet the needs of a small comfortable week-end cruiser, and the outlook seems to be that it will meet with great success.

Anderson Activities

The Fairbanks Co., of Light and Lombard Sts., Baltimore, Md., has taken the agency for the Anderson four-cycle line and will carry several sizes on display in its show rooms.

Peter Kargard, of Chicago, Ill., is building for O. B. Carlisle, of the American Bridge Co., of that city, a 40x10-foot bridge-deck cruiser from plans by William J. Deed, Jr. This boat is to be very complete and roomy for its size and will be powered with a four-cylinder 5x6-inch Anderson motor. A six-cylinder Anderson of the same type is to be installed in a fast 40-foot day cruiser which Max Tradelius, of the Hotel Belmont, New York City, is building. This makes the third Anderson which Mr. Tradelius has owned.

A New 60 x 12-Foot Express Cruiser

The accompanying plan shows an exceptionally well arranged express cruiser of the military type, from the boards of John L. Hacker, of the Albany Boat Corporation, of Albany, N. Y. The lines are on the regular Hacker refined order, which have in the past demonstrated speed and seaworthiness. The power plant is to be two of the Model H Van Blerck motors, and a speed of at least 35 miles is guaranteed under service conditions. The arrangement is as follows:

Crew's quarters forward, a toilet room aft, and stairs to the deck; a state-room immediately aft having a small extended cabin for head-room and berths extending under the bridge deck to a water-tight bulkhead forward of the engine-room. Above is a spacious bridge deck having a coaming around and space for a number of chairs.

For military purposes a gun is mounted on each side of the small cabin and the helmsman is always amidships. Aft of this comes the engine-room, which has a cabin extending above the deck, with metal framed windows; also a number of ventilators to ensure perfect ventilation. Aft of the stack is a galley and toilet room of good size, and immediately aft are the dining salon and owner's quarters. Aft of this is a very spacious deck for a number of chairs, and this deck can also be used for a gun or even torpedo tubes in case of warfare.

An Indian River Cruiser

Down on the west bank of the far-famed Indian River nestles the town of Eau Gallie, Fla. This thriving little winter resort is a favorite with motor boatmen, for it enjoys the privileges of having plenty of deep water—that is, deep for Florida, the river having a depth of from 8 to 20 feet its entire length.

The fleet of motor craft at Eau Gallie includes the trim and comfortable little cruiser Castleton, owned by General John B. Castleman, one of Louisville, Ky.'s, most prominent citizens, and a winter resident of Eau Gallie. Castleton is 30 feet long by 7 feet 4 inches beam and 2 feet draft. Her power plant is the compact and quiet little Model E, 17-25 h.p. Sterling, which purrs contentedly and unobtrusively away in its nook under the cockpit floor and easily gives the cruiser a speed of 14 m.p.h. The General writes, "The engine is noiseless, strong and always in order." The accompanying photo shows Castleton speeding along the Indian River at Eau Gallie in front of General Castleman's residence.

Rost Handles Scripps

Eastern Destinies

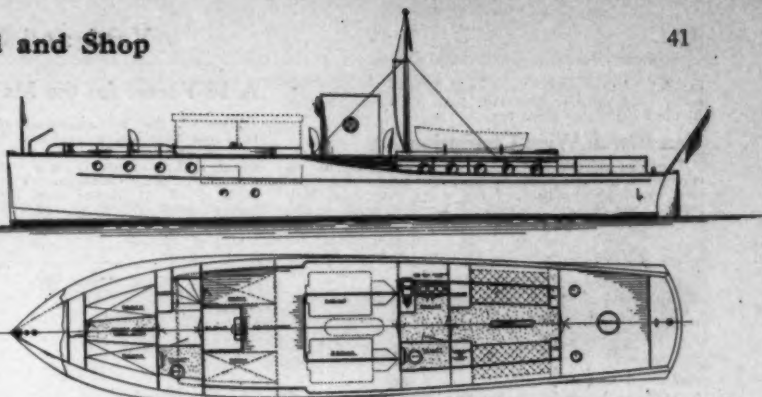
The increase in sales in the eastern market of the Scripps all-enclosed power plants has been so marked during the past year that the Scripps Motor Co., of Detroit, Mich., has established an eastern office in New York City to better serve this rapidly increasing market.

A beautiful suite of offices has been engaged on the 35th floor of the Equitable Building, where a complete selling and service organization has been installed under the management of N. G. Rost, whose association with the marine engine

business is of such long standing that he requires no introduction. From this location the company will conduct sales for the entire Atlantic Seaboard from Florida to Portland, Me., as well as the Maritime Provinces in Canada.

Matthews Boat Co. Reorganizes

The Matthews Boat Co., of Port Clinton, O., has recently undergone reorganization into an \$820,000 corporation and will hereafter be known as the Matthews Co. Under the new regime the boat department is managed by Messrs. Toye and Fermann. Mr. Toye has been associated with the Matthews Co., for the past seven years and is considered one of the best hull men in the country. Mr. Fermann, who is a graduate of Michigan University, has also been connected with the firm for a number of years. He will take care of the design and business end of the boat department, handling the same work that John H. Wells has done so capably in the past. Mr. Wells is leaving the company on the first of April to go with the sales organization of the Willys-Overland Co., and will act as owner's representative for Mr. Willys on his new 246-foot steam yacht which is now building at Bath, Me. Mr. Matthews from now on will devote most of his time to the lighting plant end of the business, which has grown impressively during the past two or three years. The company announces that it has



Profile and arrangement plan of the new 60-foot express cruiser designed by John L. Hacker of the Albany Boat Corporation. This cruiser has several distinctive features

Convincing Testimonials

It must be mighty interesting to handle the correspondence of a firm like the Brooks Mfg. Co., of Saginaw, Mich., and check up on the testimonials which come in from all quarters of the globe. People the world over are by nature more ready to kick than to praise, so an unsolicited testimonial must seem like a nugget of pure gold. That the Brooks Co. gets many such is made apparent by the recent publication of a large sheet including two or three dozen of them. These relate to the many different styles of hull sold either complete or in K-D by the Brooks people, and one of them is unusual enough to bear reprinting. It is as follows:

"Brooks Mfg. Co.

"Gentlemen: I have now built three boats (two launches) after your patterns and find it very interesting work on my long voyages at sea, and will continue to build more of them. I had your catalogues sent me about five years ago and as those may be out of date, as I believe I noticed when dealing with you during my stay in Pensacola, in February and March, this year, I will be very much obliged to you for sending me your latest catalogue for both small and large boats. I would like to order a boat from you on my arrival in Mobile, but I am afraid it cannot reach me in time while I am there.

"Thanking you beforehand, I remain,

"Truly yours, J. Skalmrud, Montevideo.

"Address Barque Lilla, Norwegian Consul, Mobile, Ala."

The Loew-Victor Co.'s New Motors

It has recently been announced that the

new motors manufactured by the Loew-Victor Engine Co., of Chicago, Ill., will hereafter be known as the Duesenberg instead of the Harbeck models, as in the future this company will build engines only from Mr. Duesenberg's design. All Loew-Victor motors are now being built under the personal supervision of the Duesenberg brothers.

New Regal Distributor at Portland

The Regal Gasoline Engine Co., of Coldwater, Mich., announces a recent change in the distributors of Regal engines for Oregon. They are now handled by the Beebe Co. at Portland which, as can be seen from the accompanying photograph, has an exceptionally attractive store for the display of marine engines, boats and hardware. It is situated advantageously fronting one of the main streets with the side opening out upon the Willamette River.

When You Buy Happiness

It is an old saying that money will not buy happiness, and this may apply to the sum total of human affairs. One thing is sure, however, and that is that in the sport of motor boating money does buy happiness. This is aptly illustrated in the case of Mr. Corning, of the Hubbs & Corning Company, manufacturers of paper and twine at Baltimore. Mr. Corning was one of the hundreds who decided during the past year to buy a Red Wing Thorobred motor and he has just written a letter to the manufacturers of this well-known machine, The Red Wing Motor Co., of Red Wing, Minn., in which he expresses his happiness.

"In the past year I have had the greatest satisfaction from my Model F Thorobred motor. It has done everything I have asked it to do and has done it satisfactorily, and I am highly pleased with the efficiency and economy of this motor. I am interested in any improvements you may make, though I am not in the market for a new motor."

A Little Personal History

The Wright Machine Co., of Owensboro, Ky., whose marine motors were described in a recent issue, advises us that it has been in business for thirty-one years, having started as a novelty iron works. The concern now has two three-story brick buildings, which are each about 125 feet long and 100 feet wide. No new capital has ever been introduced into the organization, but the business has been conducted along



The attractive store of the Beebe Co., of Portland, Ore., distributors for the Regal Engine Co., of Coldwater, Mich.

careful, conservative lines, which have brought results. The present president, John S. Wright, started in the business as office boy.

Van Blerck Wins Championship

The Van Blerck Motor Co., of Monroe, Mich., received the following cable a few days ago: "Australasian speed championship forty miles just held Melbourne, won by my hydroplane Tortoise, your engine



A 16-foot boat built by the Barbour Boat Co., for a trip through the Grand Canyon

ran beautifully."

E. S. Rymill, the sender of this cable, purchased an eight-cylinder 5 1/2 x 6-inch special high speed Van Blerck motor early in 1915, it being shipped to him at Adelaide, Australia. At the same time he purchased a complete set of plans from John L. Hacker for a 26-foot hydroplane of very solid construction. He built this boat during the months of August, September and October (which is the Australian winter) and launched her late in October and since then has cleaned up every race entered, despite the fact that his power plant is not a racing machine and is considerably heavier than is usual with hydroplane motors.

The Sun Never Sets on a Sterling

Among the first questions a well-informed prospective buyer of marine engines asks of the manufacturer, nowadays, are "What kind of service will I receive?



Two boats owned by the Police Department of Boston, Mass. They are powered with 25-30 h.p. engines made by the Buffalo Gasoline Motor Co.

Will I be subjected to a vexatious delay if the replacement of a minor part becomes necessary? Can I get expert repair work without sending half around the world for it and losing half a season?"

The leading marine motor manufacturers are now awaking to the importance of giving adequate service to their customers and the Sterling Engine Co., Buffalo, N. Y., was one of the first to realize this requirement and to provide for efficient service. It maintains a service department and numerous service stations, and every Sterling distributor conducts a fully equipped service station, where spare parts are kept on hand and where factory trained men may be secured at short notice. The motor boatman who lives at a great distance from Buffalo, the home of the Sterling, can rest assured that if he becomes the owner of a Sterling he will receive the same prompt and expert service as the owner who lives in Buffalo. The Pacific Coast owner, the Southern owner and even the foreign owner finds that there are Sterlings in all parts of the world and that wherever the Sterling is sold there are to be found competent men and proper materials for attending to subsequent wants should there be any.

Bosch Equipment at the Show

In an investigation made by A. H. Bartsch, of the Bosch Magneto Co., at the recent Motor Boat Show it was found that of all the motors exhibited, 70 per cent. depended upon magnetos for their source of ignition current, and that 56 per cent. of this number employed Bosch magnetos as standard equipment. Among other interesting details brought out by this investigation was the fact that only 23 per cent. of the magneto-equipped engines were arranged with an auxiliary battery system operating a separate set of spark plugs.

Marblehead Anti-Fouling Green

Marblehead Anti-Fouling Green which has always been so highly esteemed by yachtsmen is today put on the market only in double strength. Formerly it was put up in this way only for use in Southern waters, but as it gave such fine results some time ago the manufacturers, the Stearns-McKay Mfg. Co., of Marblehead, Mass., made its entire output in double strength, making at that time no increase in cost. This year, however, owing to the great increase in cost of the chemicals used in this paint, due to the war, it has been necessary to advance the price of Marblehead Anti-Fouling Green, but the firm states that no advance will be made except in accordance with the exact increase in cost of the chemicals and that the increase in the cost of painting a 30-footer would only be about \$2.50 for the season.

A 16-Footer for the Movies

One of the accompanying photographs shows a 16x4-foot boat which was built by the Barbour Boat Co., of Arlington, Mo., for a moving picture concern which wished to use it on a trip through the Grand Canyon of the Colorado. The boat which has a freeboard of 21 inches was built of 18-gauge galvanized steel, stagger-riveted throughout, and all the seams solder-soaked. Two bulkheads were riveted in, leaving the cockpit 4 feet long. Removable watertight hatches were placed in the forward and after decks, and removable air tanks sufficient to sustain the boat when full of water were provided. Hand holds were located in the cockpit so that the occupants could hold on in case the boat turned turtle.

Beating the Old Enemy

Knowing that the best way to beat the arch enemy, the high cost of fuel, is to increase the efficiency of the motor, the staffs of the Hampton Kerosene Carburetor Co., of New York City, and the H. & N. Automatic Carburetor Co. have combined for the past six months in the design and production of carburetors which will meet with every requirement of the internal combustion engineer. Of these the H. & N. Automatic is a gasoline carburetor which automatically maintains the air and gas to exact theoretical proportions at all speeds, the result being, it is stated, that a much higher proportion of the gasoline is converted into a combustible mixture. This carburetor in recent competition with other makes is declared to have shown an increase in power of 28 per cent. and a decrease in fuel con-

sumption of 45 per cent. The Hampton carburetor is a duplex instrument so constructed that it may be operated with equal facility on either kerosene or gasoline. After running for about two minutes on gasoline for the purpose of heating the carburetor to a sufficient temperature to vaporize the kerosene, a lever is pulled, turning off the gasoline and permitting the kerosene to take its place. In recent tests on a Sprague Electric dynamometer the power and torque curves are declared to have shown a marked increase over gasoline on a standard motor with a popular gasoline carburetor.

Albany Corporation Opens Southern Branch

L. L. Tripp, President of the Albany Boat Corporation, of Albany, N. Y., has been spending a few weeks at Miami, Fla., where his company has opened a southern office at 210 Twelfth St. Mr. Tripp has been up and down the East Coast, favor-

ing Miami and Palm Beach especially, and has hobnobbed a good deal with his company's well-to-do customers. The Albany company has done a good many unique things not only in perfecting its luxurious types of pleasure boats, runabouts and express cruisers, but in the establishment of a production branch and service department whereby it is possible to keep in constant touch with southern owners of Albany boats.

One of the entrants in the recent midwinter races at Miami which occasioned a great buzz of excitement in the grandstand was Albany, a 32-foot open runabout, powered with a six-cylinder Van Blerck and built by the Albany Boat Corporation. This boat which was driven by Bert Southall and W. J. Webber, Manager of the Albany Co.'s Miami branch, is in no respect a racing runabout, but is a family type built so as to be staunch and reliable and suitable for every day use regardless of weather conditions. In spite of her heavy construction, however, Albany won in the displacement racer class, and it is stated that as a result her builders have secured some nice business in express cruisers and extra fast runabouts. Further fruits of this company's extension in Southern business consist in the working out of a new type of cabin boat in 32, 36 and 40-foot lengths for Florida fishing. These boats have been evolved after a careful study of requirements by Mr. Webber, and it is declared that they will be capable of speeds ranging from 20 to 30 m.p.h.

The Jacobson Oil Gas Producer

We are informed that on February 3 of this year a patent was allowed to Chas. A. Jacobson, of Saratoga Springs, N. Y., for an oil-burning device for using kerosene and distillate in gasoline engines. The Jacobson Gas Engine Co. has been formed for the purpose of manufacturing these producers, and it is expected that there will be a very wide field for them. That they will meet with success seems to be attested by a letter received from one of the first users of this device, part of which we quote as follows: "Answering your inquiry as to the success that we have had with the gas producer which we attached to our 16 h.p. four-cycle Globe engine, we beg to say that we have run something over 400 miles with marked success. We are particularly pleased with the saving in the use of the gas producer over that of the gasoline, the cost of fuel being about one-half. When we install this producer on our 50 h.p. engines we shall look for better results and a greater saving in the cost of operation."

Further news from Saratoga Springs comes from the sales and engineering offices of the Albany-Jacobson Machine Co., of Albany, N. Y., to the effect that this company is now manufacturing Albany-Jacobson semi-Diesel oil engines for marine work in sizes from 2 to 200 h.p. These engines are to be offered complete with propeller, reverse gear, etc., at a very fair price.

Leece-Neville at the Show

The popularity of Leece-Neville electric starting and lighting systems for marine engines was clearly demonstrated at the recent New York Motor Boat Show, more than 90 per cent. of all engines fitted with starting and lighting equipment having the Leece-Neville system installed. Further evidence of this system's popularity is shown by the fact that the engine manufacturers who have adopted Leece-Neville equipment are among the leaders in the marine engine industry. The manufacturer of these systems, the Leece-Neville Co., of Cleveland, O., has recently pointed out that a starting system is a greater necessity to the motor boat owner than to the automobile owner, and that one of the most important features of electric starting is one-man control which provides the small boat owner with complete regulation of his craft from the steering station. Being ready to cast off his lines or hoist the anchor, he has only to set his foot on the button to set the machinery in motion. This enables him to start the engine while directing the work on deck and when all is clear he has merely to throw in the switch and be on his way. Leece-Neville systems operate at 24 volts which high voltage makes it possible, it is said,

(Continued on page 62)



Map of the world with dots to show the wide-spread distribution of Sterling dealers and service stations

MOTOR BOATING ADVERTISING INDEX

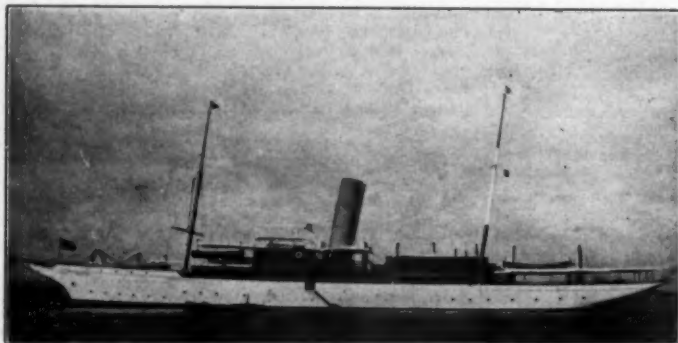
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Naval Architects
and
Yacht Brokers.

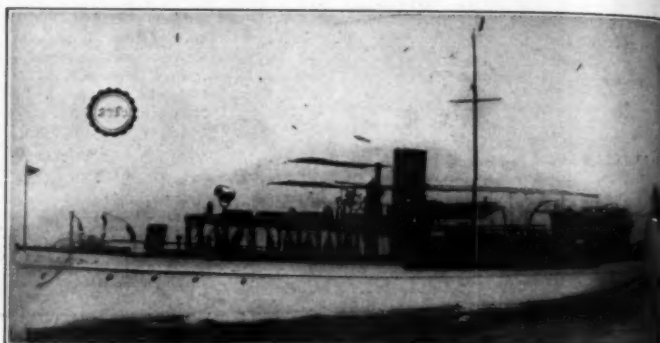
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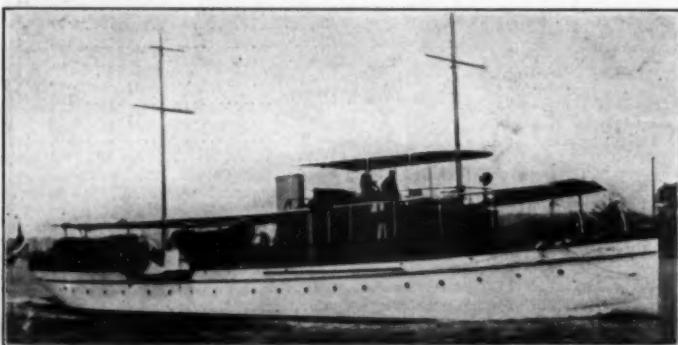
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request. Catalogue illustrating types and sizes of yachts we have for sale will be mailed on application.



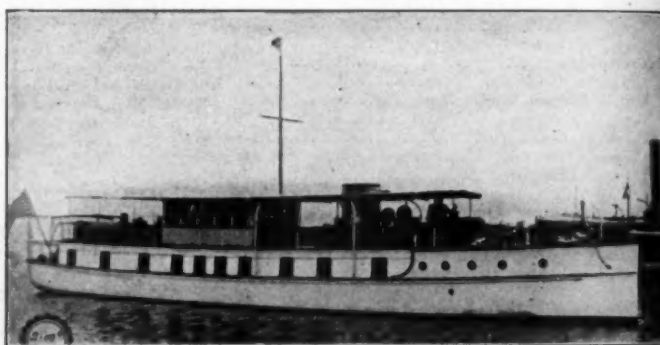
No. 270.—For Sale or Charter.—200 foot ocean going steam yacht. Speed up to 15 knots. For further particulars apply to Cox & Stevens, 15 William Street, New York.



No. 2782.—For Sale or Charter.—Fast, twin screw power yacht; 99 x 14 x 4.6 ft. Speed up to 19 miles. Large dining saloon forward; three staterooms, bath, etc., aft. Adapted for ferry service or general cruising. Cox & Stevens, 15 William Street, New York.



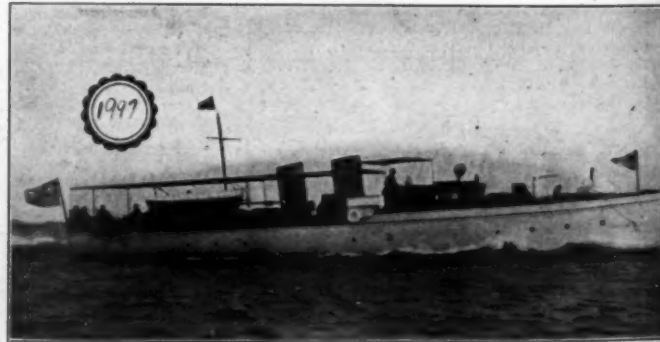
No. 1796.—For Sale or Charter.—Very roomy, twin screw cruising power yacht; 99 x 17 x 4 ft. Recent build. Speed 13-15 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms; all conveniences. Cox & Stevens, 15 William Street, New York.



No. 2100.—For Sale or Charter.—Modern twin screw gasoline houseboat; 95 x 19 x 3.3 feet. Speed 13-14 miles; two 100 h.p. motors. Large social hall on deck. Dining saloon, four double staterooms, bath, etc. Very desirable craft. Cox & Stevens, 15 William St., New York.



No. 1820.—For Sale.—Especially desirable, up-to-date, twin screw cruising power yacht; 98 x 16 x 4 ft. Speed 14-15 miles. Large dining saloon and galley on deck; four staterooms, two bathrooms, etc. Low price. Cox & Stevens, 15 William St., New York.



No. 1997.—For Sale.—Attractive power yacht, 81 x 12 x 4 ft. Speed up to 15 miles. Recent build. Dining saloon forward; main saloon, one double and two single staterooms aft. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 1744.—For Sale.—Attractive twin screw gasoline cruiser; 67.6 x 13.6 x 4 ft. Highest grade construction by well known firm. Speed 11-12 miles. Standard motors. Dining saloon and galley forward; two double staterooms and bath aft. Price low. Cox & Stevens, 15 William St., New York.



No. 2842.—For Sale.—Twin screw raised deck cruiser; 55 x 13 x 3.9 ft. draught. Built 1912. Two 30-40 H.P. Sterlings; speed 10 miles. Double stateroom, saloon, large galley, etc. Owned by Estate. Price low. Cox & Stevens, 15 William Street, New York.



No. 2870.—FOR SALE.—High speed gasoline cruiser; 57 x 9.3 x 3 ft. Speed up to 20 miles; 150 H.P. 6-cylinder Sterling motor. Double stateroom, saloon, two toilets, etc. Low price. Cox & Stevens, 15 William Street, New York.

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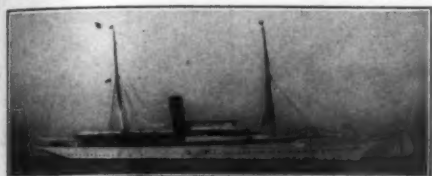
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(ESTABLISHED 1900)

CABLE, "HUNTSEA," N. Y.

MARINE INSURANCE

The yachts advertised below represent the finest of the size and type for Sale and Charter, every one of which I can recommend. Full particulars, plans and photographs mailed immediately upon request. My 1916 Illustrated Yacht List will be mailed free to those interested.



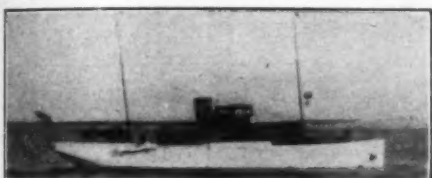
8014—282 foot Steel Twin Screw Ocean Cruiser. Finest appointments. Speed, 15 knots.



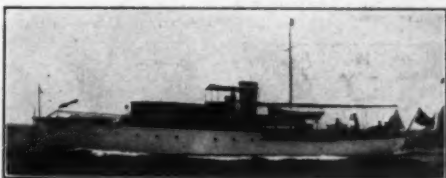
8001—Twin Screw 105 foot Cruiser. 4 staterooms. 2 bath. Standard motors. Speed, 21 miles.



8070—110 foot Steam Cruiser. 3 staterooms. All conveniences. Very low price. Will trade for larger steam house boat.



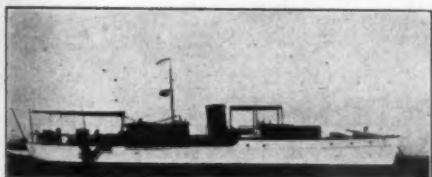
7920—Ablest 95 foot Seagoing Cruiser available. 2 staterooms. Every convenience.



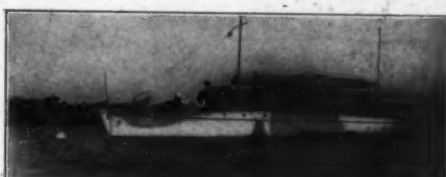
8241—83 foot Twin Screw Lawley Coast Cruiser. Modern appointments. Perfect condition.



8124—Exceptionally fine Lawley Seagoing Cruiser. 2 staterooms and bath. Deck dining saloon. 6-cylinder Standard motor. Perfect condition. Low price.



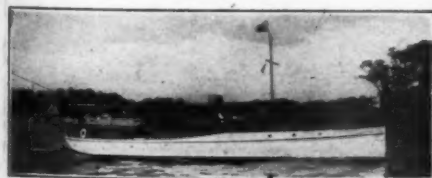
8247—Twin Screw 76 foot Lawley Fast Coast Cruiser. 2 staterooms and bath. Speed, 13 knots.



8204—75 foot Twin Screw Seagoing Cruiser. Exceptionally able. 2 staterooms and bath. Low price.



8103—71 foot Twin Screw Fast Coast Cruiser. 2 staterooms. Bath. Speed, 13 miles. Perfect condition. In commission.



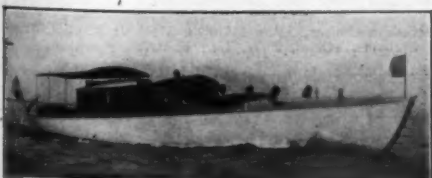
7618—The finest 60 foot High Grade Coast Cruiser available. Speed, 13 miles.



8230—59 foot Twin Screw Express Coast Cruiser. Launched 1915. Sterling engines. Speed, 30 miles per hour. Wonderful sea boat. Perfect condition. Only craft of character available.



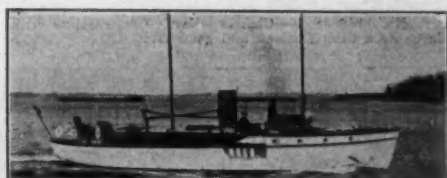
8221—55 foot Coast Cruiser. Built 1915. Extraordinary accommodations. African mahogany interior. One man bridge control.



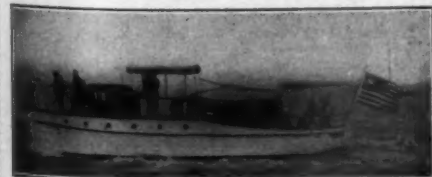
8219—54 foot Elco-de-Luxe Express Cruiser. Elegant appointments. 60 H.P. self-starting Standard engine. Speed, 16 miles. Low price.



8260—52 foot Lawley Fast Cruiser. Fine accommodations. Speed, 13½ knots. Low price.



8207—The finest 50 foot Coast Cruiser available. 2 staterooms. Standard motor. In commission.



8159—Roomiest 45 foot Coast Cruiser available. Finest construction and finish.



8206—40 foot Express Cruiser. New 1915. Speed, 25 miles per hour. Wonderful sea boat.



7993—40 foot Fast Cruiser. Speed, 12 miles.

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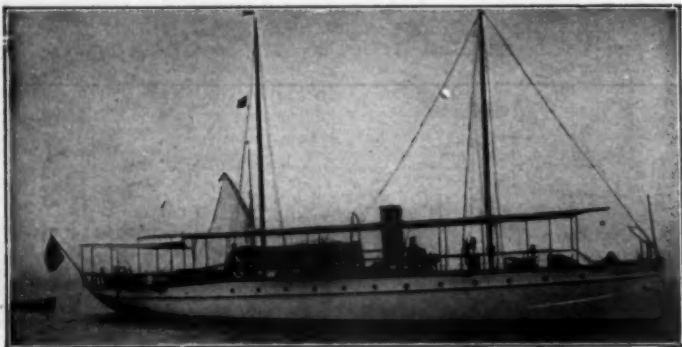
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Telephone
4510 John

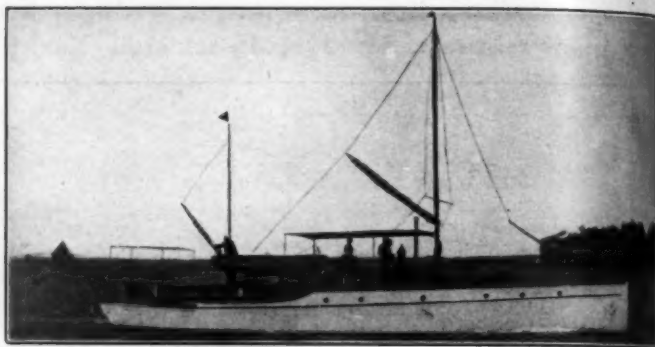
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AND
YACHT BROKERS

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New York City

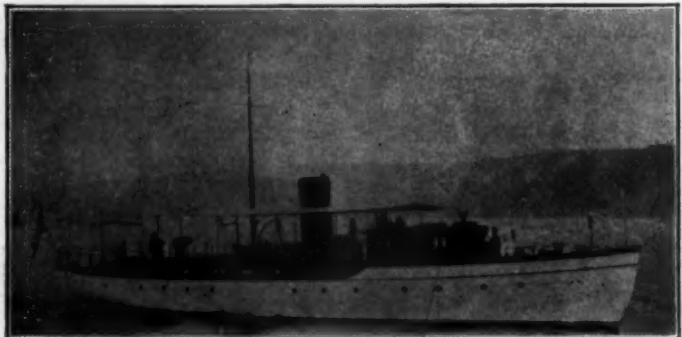
Offer for sale the following yachts, a number of which are available for charter



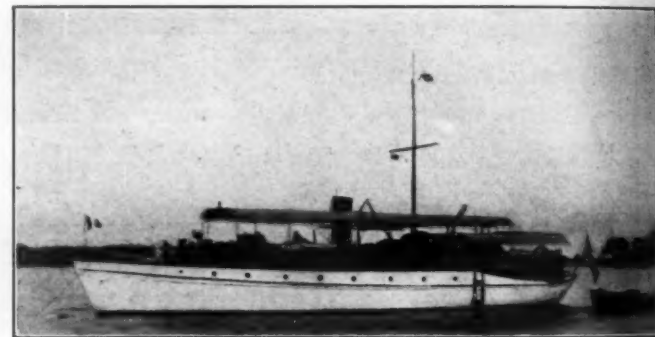
No. 8178.—Sale—Charter—85 ft. modern motor yacht. Excellent accommodations. Standard motor, speed 12 miles. Electric lighted. Large deck space.



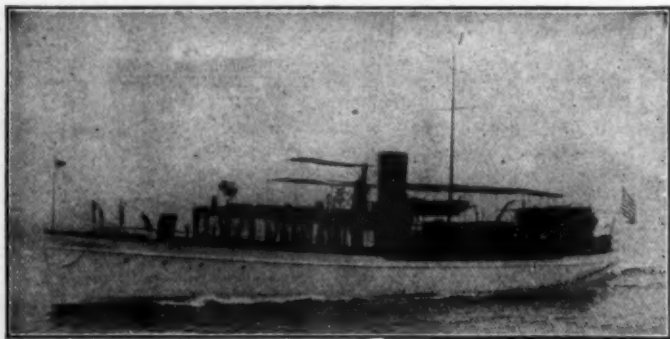
No. 8535.—Sale—Charter—Able seagoing motor cruiser, 64' x 12' 6" x 4' 5". 6-cylinder Loew-Victor, 60 H.P. motor; 2 staterooms, saloon, bathroom, etc.



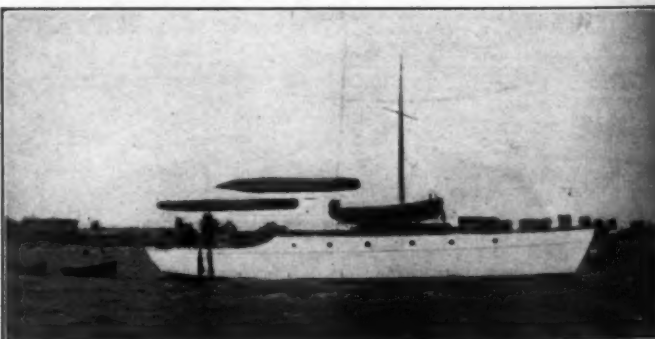
No. 8750.—Sale—Charter—Most desirable twin screw gasoline cruiser available. 84 ft. x 14 ft. x 4 ft. draft. Designed by us and built 1914. Excellent accommodations.



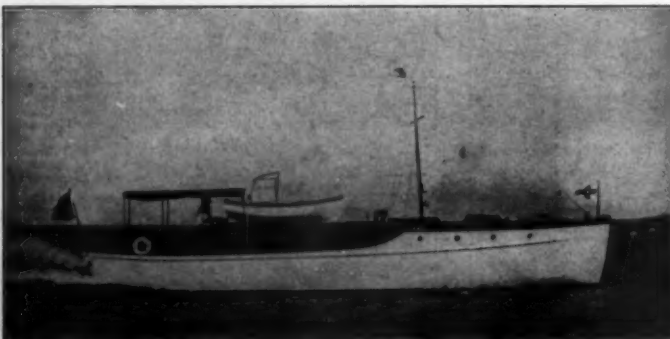
No. 7674.—Sale—Charter—Modern twin screw motor yacht 75' x 17' 6" x 3' 8" draft—20th Century motors. Speed, 12 miles. One double and one single stateroom and very large main saloon.



No. 7758.—Sale—Charter—Fast 99 ft. gasoline cruiser. Three owner's staterooms, large deck dining saloon and good after deck.



No. 7579.—Sale—Charter—Modern cruiser, 55' x 11' 6" x 3' 6" draft. Standard motor; speed, 11½ miles. 2 staterooms, saloon, 2 W. Cs.; electric lighted, etc.



No. 8338.—Exceptional opportunity to purchase the best of the smaller raised-deck cruisers available—43 ft. x 10 ft. x 3 ft. 8 in. draft. 40 H.P. Blount Motor new 1914. Speed 10 miles. Lighted by electricity. Stateroom with two berths and saloon 2 transom berths. Has toilet room, good galley and engine room. Abundance of locker room. Is a comfortable cruiser and of good sea-going qualities.



No. 8279.—Sale—Price attractive. Desirable raised deck cruiser. Lawley build. 60 H.P. Lamb motor, speed 17 miles. Stateroom with 2 berths, saloon, 2 transom berths, toilet room, electric lights, etc. Excellent condition throughout.

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NAVAL ARCHITECTS,
ENGINEERS,
BROKERS,
MARINE INSURANCE.

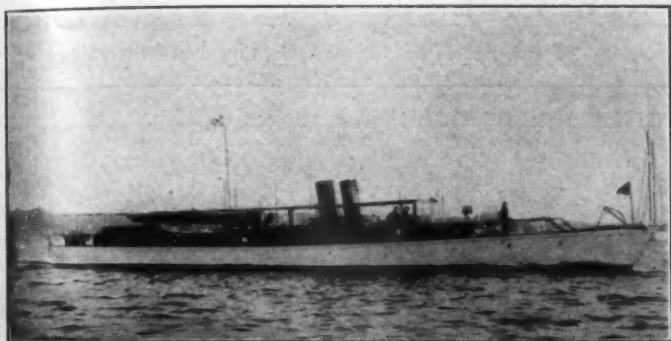
GIELOW & ORR

52 Broadway, New York

Telephone: 4673 Broad.

Cable Address:
Crogie, New York.
A. B. C. Code

It can be conservatively stated that the demand for yachts for the coming season will far exceed the supply. We therefore suggest that those contemplating buying or chartering make their decisions early to avoid inevitable disappointment.



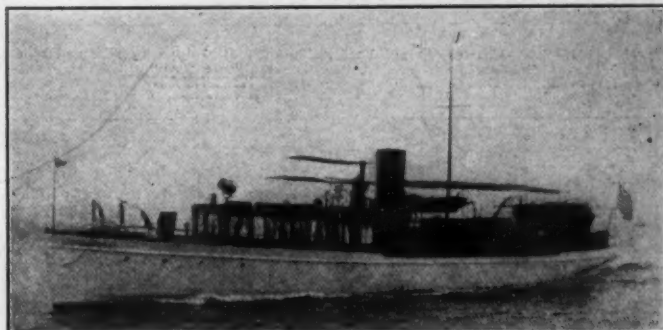
No. 3448.—For Sale or Charter.—111-foot twin screw express steam yacht. Speed 18 to 20 knots. One double stateroom. 2 transoms in main saloon and 2 in dining saloon. Triple expansion engines; watertube boiler. Electric lights. Steam heat. Ideal boat for making daily runs between owner's country home and the city.



No. 156.—For Sale.—Unusual bargain, 160-foot single screw steel steam yacht. Fine accommodations. Excellent condition throughout. Subject to closest inspection. Excellent seaboat.



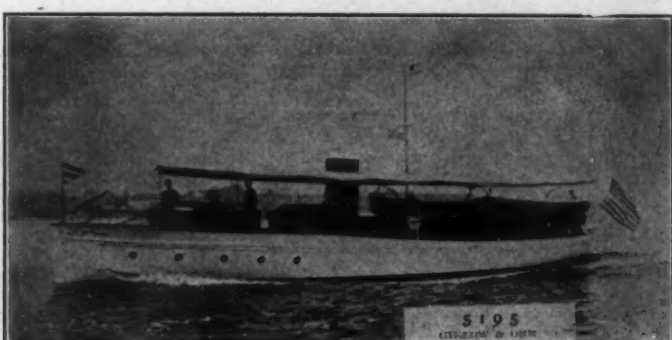
No. 414.—For Sale or Charter.—Auxiliary steam schooner, 162 feet x 120 feet x 28 feet x 16 feet draft. Unusually fine seaboat. Excellent accommodations. Has every convenience for offshore cruising.



No. 3659.—For Sale or Charter.—High class 100-foot twin screw motor yacht. 3 staterooms. Bathroom. Deck dining saloon. Large bridge and after deck. Speed up to 18 miles. Reasonable.



No. 5223.—For Sale or Charter.—84-foot twin screw motor yacht. Built 1914. Speed 12 to 13 miles. Deck dining saloon. 2 double staterooms. Main saloon. Bath room. Hot water heat. Electric lights.



No. 5195.—For Sale.—Bridge deck cruising motor yacht, 65 x 14 x 4 feet. 1915 construction. Speed 12 miles. 6-cylinder 65-70 H.P. motor. Sleep 6 in owner's party. Fine seaboat. Every convenience.



No. 5179.—For Sale.—Practically new cruising motor yacht, 55 x 13.6 x 3.6 draft. Launched Spring, 1915. Speed 11 miles. 30 H.P. Twentieth Century motor. Unusually well constructed. Fine accommodations.



No. 4266.—For Sale or Charter.—95-foot twin screw semi-houseboat. 4 double staterooms. Unusual accommodations. Excellent condition throughout. Subject to closest inspection. Fine seaboat.

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WILLIAM GARDNER

FREDERICK M. HOYT

PHILIP LEVENTHAL

WILLIAM GARDNER & CO.

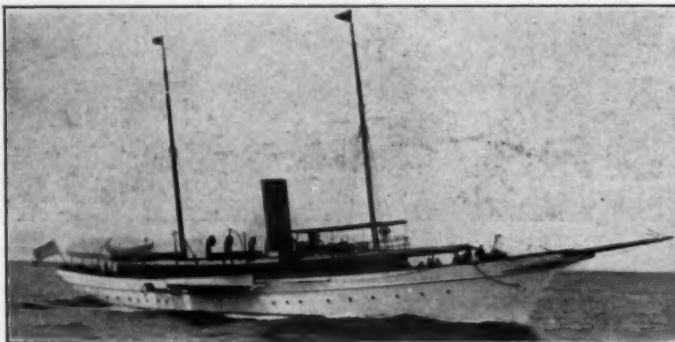
NAVAL ARCHITECTS, MARINE ENGINEERS AND YACHT BROKERS

 Telephone Call
3585 Rector

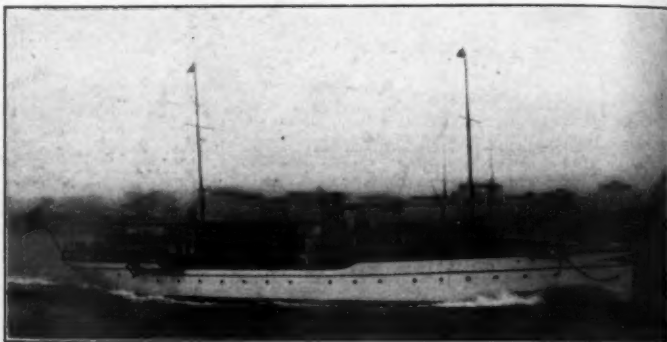
1 BROADWAY, NEW YORK

 Cable Address
Yachting, N. Y.

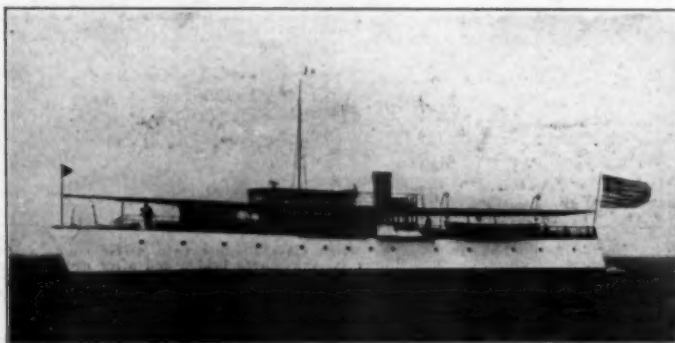
We have a complete list of Yachts of every description for sale and charter. Plans, Photos and full particulars furnished on request



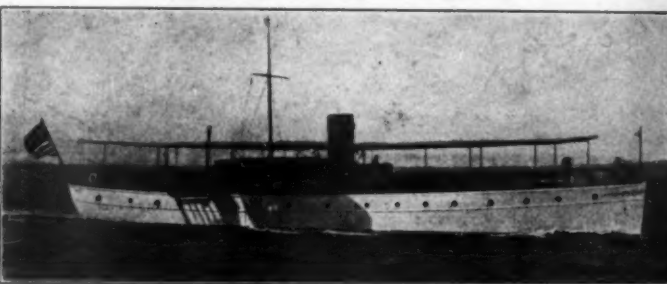
No. 143—Sale—Charter—Steam Yacht, about 200 ft. long, very able and roomy, speed 12 to 14 knots; in commission. Attractive figures. Apply William Gardner & Co., 1 Broadway, New York.



No. 1704—High-grade twin screw power Yacht, 98 x 16 x 4. Standard motors, large dining saloon, 4 staterooms, 2 bath rooms, etc. Price attractive.



No. 1238—For Sale—Cruising Motor Yacht, 125 x 20 x 6.3, speed 12 knots. Well constructed and exceptionally able and roomy.



No. 1821—Fine Cruiser, flush deck, twin screw, 90 x 15.3, two 6-cyl. Holmes motors.



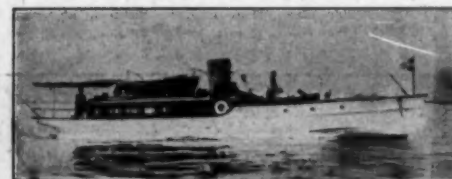
No. 1800.—Modern Bridge deck cruiser, 67 x 13, high class construction, two Standard motors.



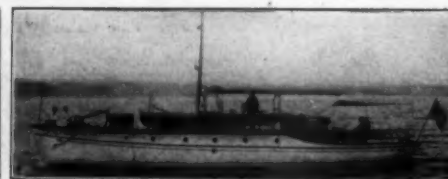
No. 1578.—Able Cruiser, 55 x 11, two Sterling motors, Auxiliary sail rig. Engine controls on deck.



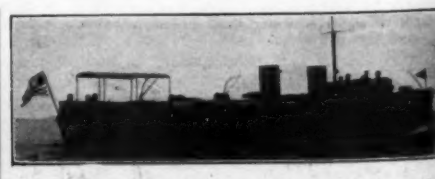
No. 1515.—Exceptional seaworthy cruiser, 66 x 13.6, Sterling 8 cyl. engine. Speed 14 miles.



No. 1782.—Fast Bridge Deck Cruiser, 56 x 9.6, new 6-cyl. 100 H.P. Murray & Tregurtha motor.



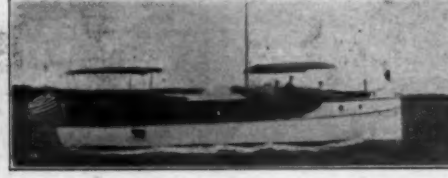
No. 1423.—Raised deck cruiser, 55 x 12, Standard motor, with deck control.



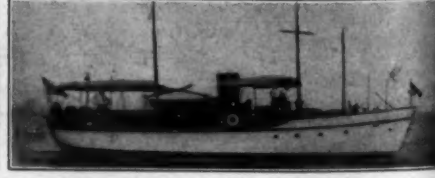
No. 2023.—Power Cruiser, torpedo type, 68 x 11.3, recent build, six cylinder Sterling, speed 12 knots. Good accommodations.



No. 2055.—Bridge deck, 58 x 11.4 x 3.6, fifty H.P. Twentieth Century motor installed 1914, speed 12 miles.



No. 2140.—Modern Cruiser, 43 x 10.6, built 1911, Standard motor, complete outfit.



No. 1869.—Bridge deck cruiser, 56 x 12 x 3, 40 H.P. motor; attractive figure.

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HENRY H. JENNINGS

HERMAN JAGLA

H. H. JENNINGS COMPANY

FORMERLY KNOWN AS

JENNINGS YACHT BROKERAGE COMPANY

AMERICAN AND FOREIGN YACHTS

Merchant Vessels for Sale and Charter

HAMBURG-AMERICAN BUILDING

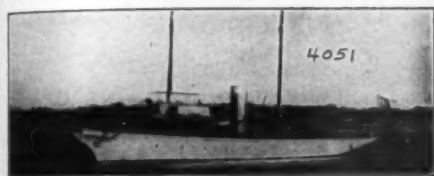
Telephone
Rector 8545Cable Address
Yachtbroco, New York

45 Broadway

New York City

Surveying
Marine Insurance

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you, write us your requirements. Our knowledge of the yachts we offer, and our 22 years' experience in the business, insure satisfaction to any one buying or chartering a yacht through this office.



No. 4051—125 foot Lawley Steam Yacht. Three staterooms, saloon, bath, etc. Speed, 13 knots.



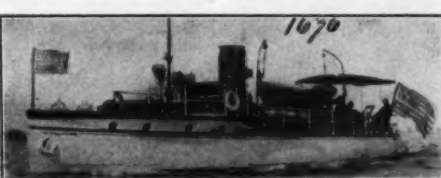
No. 1148—70 foot twin screw power Yacht. Two staterooms, large saloon with four berths. Speed, 12 miles.



No. 5000—Passenger and freight Steamer. Can carry about 500 tons cargo. Has 30 staterooms. Speed, 13 knots.



No. 1278—Sale or Charter—50 foot Cruiser. Two staterooms, saloon, etc. Speed, 11 miles.



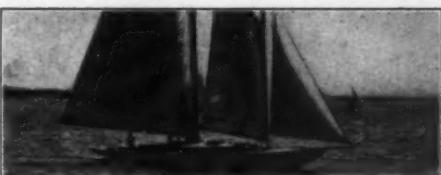
No. 1636—Sale or Charter—50 foot Cruiser. Stateroom and saloon, sleep seven. Bathroom. Speed, 10 miles.



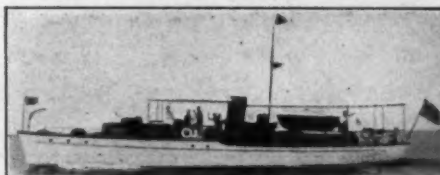
No. 4184—Auxiliary centreboard Schooner, 46 ft. long, 2 ft. 8 in. draught. Stateroom and saloon, sleep five. Sterling motor. Speed 7 miles.



No. 4148—46-foot auxiliary keel Yawl. Stateroom with two berths. Saloon, two berths and transom. Sterling motor. Speed 7 miles.



No. 4179—One design sound schooner, 41 ft. x 30 ft. x 8 ft. x 6 ft. Two berths in cabin.



No. 1337—67-foot twin screw Cruiser. Two staterooms, saloon and bath. Speed 12 miles. Bargain.



No. 1716—50 foot twin screw Semi-houseboat and Cruiser, V-Bottom; Tunnel stern. Draught, 17 inches. Launched January first, this year. Good accommodation, including bath with hot and cold water. 75 H.P. Van Blerck Motor.



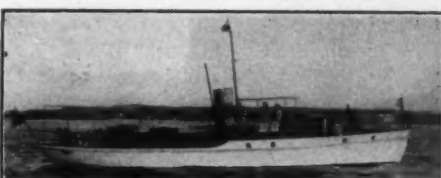
No. 1717—33 foot Hand V-Bottom Express Cruiser. Built 1915. 60 H.P. Loew-Victor. Speed, 17 miles. Four berths in cabin. Electric light, etc.



No. 971—36 foot Cruiser. Stateroom and cabin sleep four. 20 H.P. Buffalo. Electric light, etc. Speed, 9 miles.



No. 1038—Sale or Charter—60 foot Cruiser. Two staterooms, saloon, bath, etc. Speed, 10 miles.



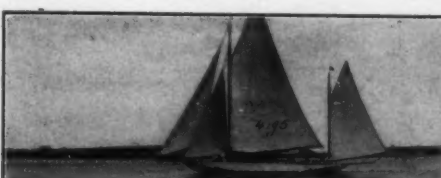
No. 1529—65 foot Cruiser. Double stateroom, saloon and dining saloon, bath, etc. Speed, 12 miles.



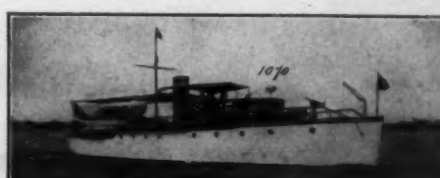
No. 1709—40 foot Cruiser. Double stateroom, saloon with three spring berths and two pipe berths. Speed, 10 miles.



No. 1714—60 foot twin screw Express Cruiser. Two staterooms, saloon, etc. Speed up to 30 miles.



No. 4195—65-foot auxiliary centreboard Yawl. Recently built. Two staterooms, saloon, etc. Standard Motor. Speed, 6 miles.



No. 1070—85 foot twin screw steel power Yacht. Three staterooms, saloon, bath, etc. Speed, 14 miles.

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FRANK BOWNE JONES, Yacht Agent

Cable Address "Windward," N. Y. 29 Broadway, New York

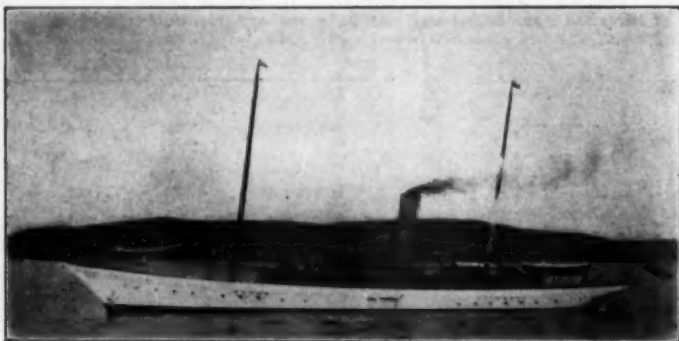
Telephone, Rector 3890

High-Class Yachts of all types for sale and charter

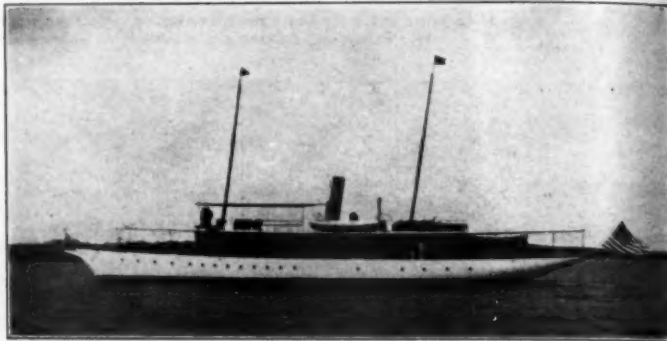
NAVAL ARCHITECTURE

Descriptions, Prices on Request

MARINE INSURANCE



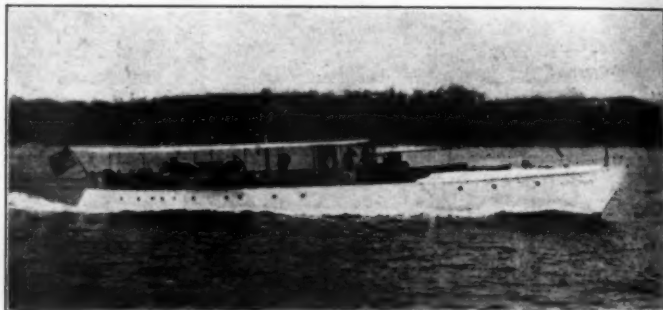
No. 3904—200 ft. Ocean Going Steam Yacht; one of the best kept up vessels in the fleet; might be chartered.



No. 2541—130 ft. Cruising Steam Yacht; good speed; economical; splendid accommodations; also available for charter.



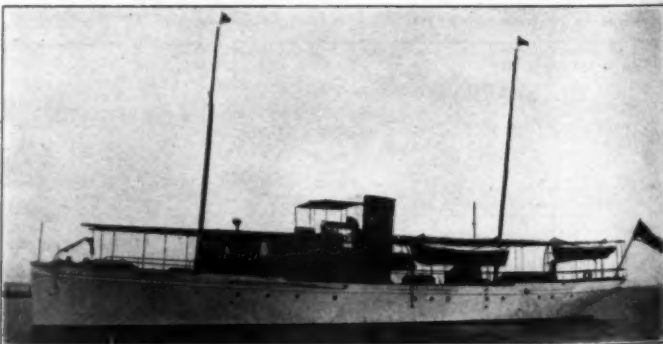
No. 4588—Twin Screw Power House Yacht; length 110 ft.; probably the finest boat of the type; practically new.



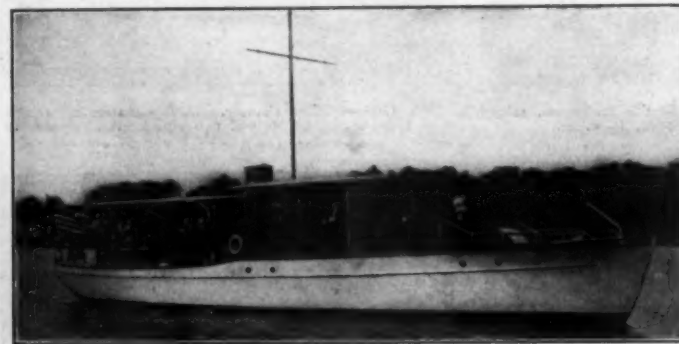
No. 3945—92 ft. Twin Screw Steel Express Yacht; two 300 H.P. Standard motors; high speed; A-1 condition; low price.



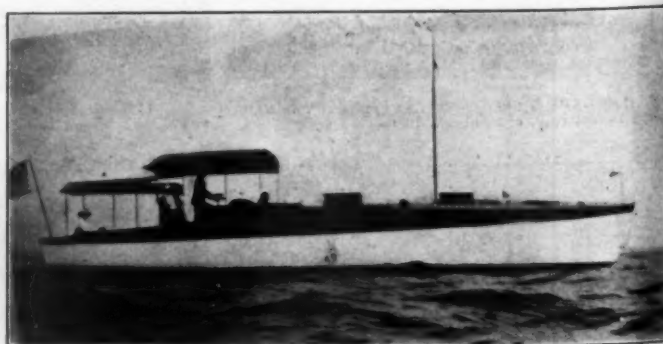
No. 2210—110 ft. Express Steam Yacht; one of the fastest and best boats of the type offered at a reasonable price; can be chartered.



No. 6354—95 ft. Gasoline Yacht; splendid accommodations; good speed; excellent build and design.



No. 7038—75 ft. Gasoline Cruiser; two double staterooms and saloon; 6-cylinder motor; probably the best boat of the size.



No. 3565—50 ft. Bridge Deck Cruiser; stateroom and saloon. Holmes motor excellent boat at a low price.

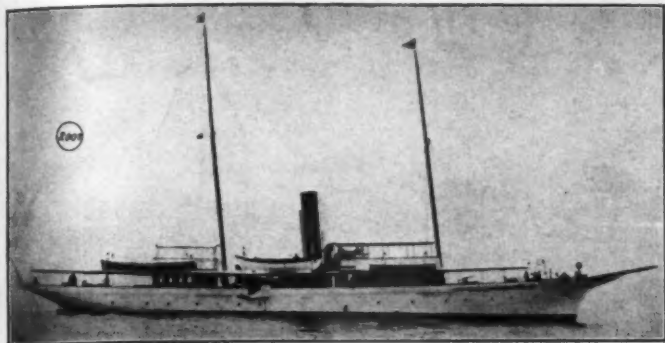
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Naval Architects
and
Yacht Brokers

COX & STEVENS

15 William St., New York
Telephone—1375 Broad
Cable—BROKERAGE.

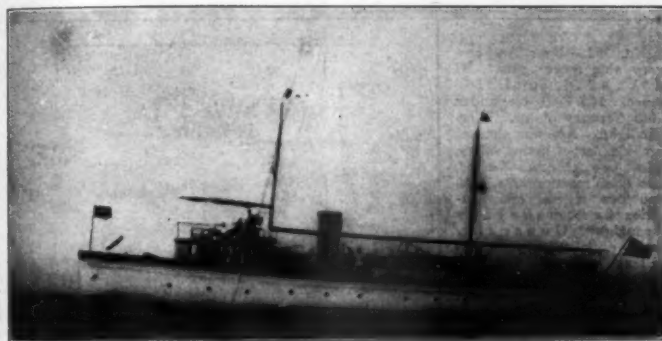
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request. Catalogue illustrating types and sizes of yachts we have for sale will be mailed on application.



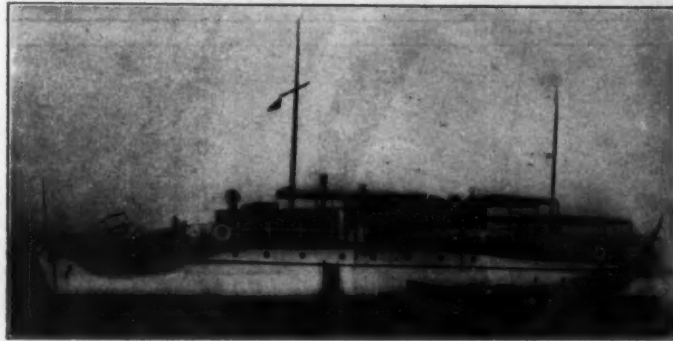
No. 200.—For Charter—165 ft. steel steam yacht. Splendid seaboat. Economical to operate. Large accommodation. Cox & Stevens, 15 William Street, New York.



No. 13.—For Charter—110 ft. twin screw cruising steam yacht. Speed 14 miles. Exceptional accommodations. Apply to Cox & Stevens, 15 William Street, New York.



No. 1279.—Offer Wanted.—Modern twin screw cruising power yacht; 98 x 16 x 5.6 ft. Speed, 13 miles; two 75/90 H. P. 6-cyl. Standard motors. Large deck dining saloon; four staterooms, main saloon, bath, two toilets, etc. aft. Handsomely finished and furnished. Special opportunity. Cox & Stevens, 15 William Street, New York.



No. 1526.—For Sale.—Very able, twin screw power yacht; 75 x 14 x 6 ft. Recent build. Very heavily constructed; splendid seaboat. Two staterooms, large saloon, bath, electric lights, etc. Large deck space. Price attractive for immediate disposal. Cox & Stevens, 15 William Street, New York.



No. 2247.—For Sale at low figure—Twin screw, flush deck power yacht, 90 x 15.3 x 4.9 ft. Very able craft. Recent build. Speed 13 to 14 miles. For full particulars apply to Cox & Stevens, 15 William Street, New York.



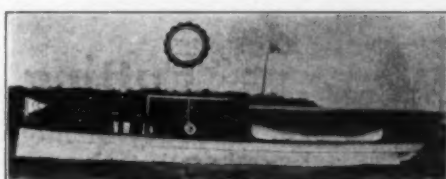
No. 2478.—For Charter.—Exceptionally roomy, twin screw power yacht; 77 x 16.6 x 3.6 ft. Speed, 11 miles. Accommodations include two saloons, three staterooms, bath, two toilets, etc. All conveniences. Cox & Stevens, 15 William Street, New York.



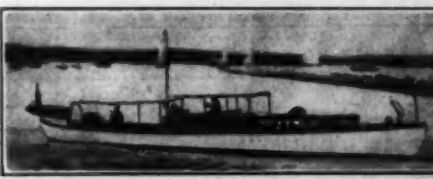
No. 298.—For Sale or Charter—Twin screw gasoline houseboat, 68 x 23 x 4 ft. Speed 10 miles. Five double staterooms. Low price. Cox & Stevens, 15 William Street, New York.



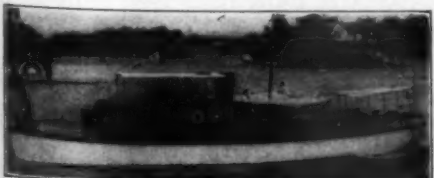
No. 3098.—For Sale.—High speed twin screw V-bottom power boat; 58 x 11 x 3 ft. Built 1915. Speed up to 30 miles; two 150 H.P. 8-cyl. Sterling engines. Double stateroom, saloon, separate galley, etc. Very substantially constructed; excellent seaboat. Cox & Stevens, 15 William Street, New York.



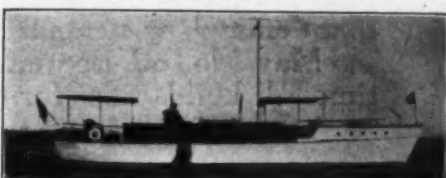
No. 2508.—For Sale.—Fast power boat; 65 x 10.5 x 3 ft. Speed up to 16 miles; 100 H.P. Standard motor. Roomy saloon forward; double stateroom aft. Excellent combination day boat and cruiser. Located in Maine. Low price. Cox & Stevens, 15 William Street, New York.



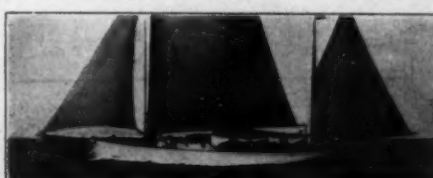
No. 2825.—For Sale at Low Figure—Day Cruiser, 60 x 10.9 x 3.3 ft.; speed, 12 to 13 miles; 40-60 horsepower; 6-cylinder, Standard motor; especially desirable boat for day service or tender to racing yacht; excellent condition. Cox & Stevens, 15 William St., New York.



No. 544.—For Sale.—Very desirable and comfortable modern twin-screw cruising power yacht; 65 x 14 x 4 ft. draught. Construction very substantial. Two 40 H.P. "GLOBE" engines; speed 11-12 miles. Motors recently overhauled and in first-class condition. New gasoline and water tanks 1913. Accommodations include dining saloon, two double staterooms, 3 toilets, galley, etc. Finished in Honduras mahogany, butternut and white. Electric lights. Exceptionally large deck space. Complete equipment. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 2053.—For Sale or Charter.—Bridge deck cruiser; 56 x 11 x 3.6 ft. 35-45 H.P. 20th Century motor; speed up to 12 miles. Double stateroom, saloon, galley, etc. Prices attractive. Cox & Stevens, 15 William Street, New York.



No. 703.—Sacrifice for Immediate Sale.—Roomy, keel and centreboard auxiliary yawl; 46 ft. overall, 30 ft. waterline, 13 ft. beam, 5 ft. draft. Good sized saloon, stateroom, etc. Sails new 1913. Speed under power, 7 miles; 20 H.P. Murray & Tregurtha motor; electric lights, etc. Cox & Stevens, 15 William Street, New York.

THE MoToR BoATING MARKET PLACE

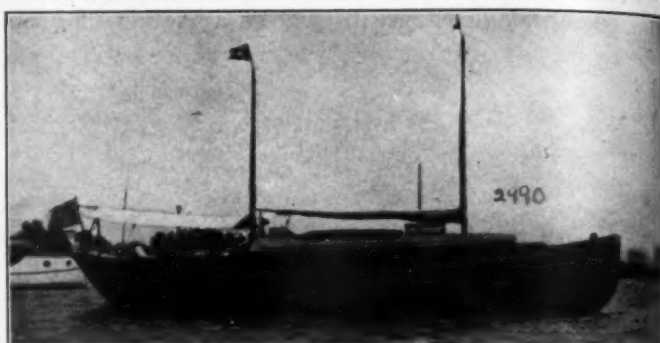
The rate for "For Sale" and "Want" advertisements is 3 cents per word, minimum 75 cents. If an illustration is used, the charge is as follows, which includes the making of the cut:
 Cut one inch deep, one column wide..... \$2
 Cut 1½ inches deep, 1½ columns wide..... \$5
 Cut three inches deep, three columns wide..... \$15

Opportunities for the Motor Boatman

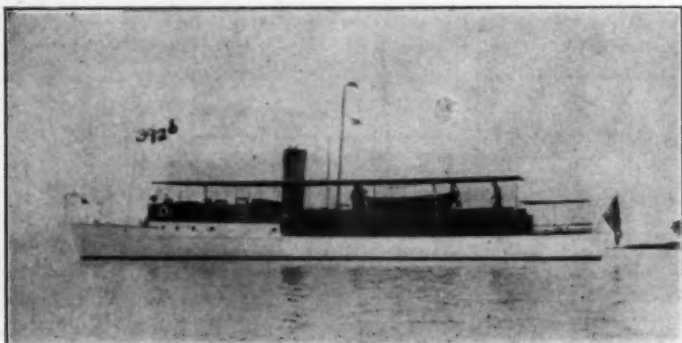
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



Centerboard Class "Q" sloop "Gazelle," 36 ft. x 20 ft. 6 in. x 10 ft. 6 in. x 3 ft., designed and built 1907 by Ralph Crosby of D. R. Crosby & Son, Osterville, for his own use. Has large cabin with accommodations for six, 5 ft. headroom, and well arranged. Complete set of racing sails by Wilson & Silsby. Interior comprises transoms, lockers, toilet, refrigerator, etc. Ideal boat for outside cruising and racing. Winner of several cups. Any reasonable offer will be considered. For further particulars, address F. S. Nock, East Greenwich, R. I.



No. 2990.—For Sale.—Very able and desirable cruiser (Seabright skiff), 41 x 18.8 x 2' 6" craft. Built 1914. 30-50 H.P. Sterling motor; speed, 9½ miles. Sleep four comfortably. Excellent condition. Complete equipment. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 392.—For Sale.—Very able power yacht; 92 x 13 x 4.2 ft. Speed, 13-14 miles. 105 H.P. 6-cylinder 20th Century motor. Electric lights. Accommodations include large main saloon with two transom berths, two double staterooms, bath and two toilets, etc. Interior finish mahogany throughout. Unusually large deck space. In excellent condition throughout. Always had best of care. Equipment complete, including power tender and dinghy. Available at attractive figure. Apply to Cox & Stevens, 15 William Street, New York.



FOR SALE.—35 ft. boat, 8 ft. 6 in. beam. 1914 two-cylinder, two-cycle, ten horse power Harvard motor. Speed eight miles per hour. Perfect condition, fully found, everything of the best. Wash room, toilet. Excellent party boat, seats thirty comfortably, carries more. Excellent cushions. Price \$800. H. G. MacDougall, 19 Lincoln St., Boston, Mass.

CANADIANS, Second-hand engine bargains. Send for list. GUARANTEE MOTOR COMPANY. 73 Bay Street, North Hamilton, Ont., Canada.

FOR SALE CHEAP.—26-foot, glass cabin boat, one year old with or without engine, also sample 10 H.P. Northwestern engine and outfit complete. G. C. Lowry, 1010 Cass Ave., Grand Rapids, Mich.

ALUMINITE PISTONS FOR YOUR BOAT MOTOR.—Will make a fast boat much faster—will make any motor run smoother and with less vibration. Write for quotation, giving name of motor, bore, etc. Green Engineering Co., St. Clair St., Dayton, Ohio.

FOR SALE.—Twenty-foot runabout. Ten horse, two cylinder engine installed under hatch forward. Good design. Speed ten miles. \$200. Address L. R. Cutler, Freeport, L. I.

SNAP!—8 cylinder V-type engine, like new. BARGAIN. Ricordo, care of Motor Boating.



FOR SALE.—Cruiser; 36 by 9, mahogany cabin, 6 ft. headroom, toilet room, refrigerator, sink with running water, stoves, buffet, ice box, cockpit 18 ft. long, self-bailing and has drop curtains all around the cockpit. New 1915 22 H.P. four-cycle Wolverine engine, reversing deck controls, one man boat; speed, 12 miles. Owner desires to sell on account of having larger boat built. Sacrifice for \$1,500. Inspection by appointment. Ed. Keil, Glenworth Avenue, North Beach, Long Island.

WANTED.—First class carpenters, boat builders, joiners, plumbers, and pipe fitters; also machine and lathe operators. Matthews Boat Co., Port Clinton, Ohio.

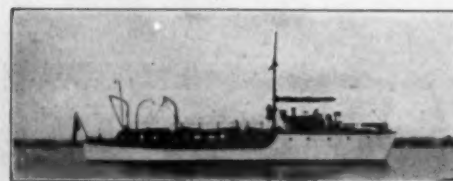
For Sale.—Baldridge reverse gear, No. 10, absolutely new. Cost \$110. Will sell for \$60. 3101 Turk St., San Francisco, Calif.

AN ELEGANT YACHT, 75 footer, now being equipped with a 100 H.P. DIESEL OIL ENGINE, cheapest power; bargain. Box 110, MoToR Boating.

FOR SALE.—Launch 33 x 8 ft. with toilet, all complete, inquire L. M. Burritt, 735 Judson Pl., Stratford, Conn.

ELCO RUNABOUT.—Thirty foot, forty horse; fully equipped, excellent condition. Must be sold at once. Price extremely low. BIER, 1496 Bedford Avenue, Brooklyn, New York.

AUTO MOTORS. 1 ATLAS 4-cylinder 40 H.P. \$35.00—1 Hupp 20 H.P.—1 E. M. F. 30 H.P. Also 2 Canoe motors \$20.00 each. Johnston, West End, Pittsburgh, Pa.



MUST BE SOLD AT ONCE TO CLOSE ESTATE.—Able Sea-Going Motor Yacht; 62' x 12' x 3' 9". Well found and in excellent condition. Will demonstrate any time. First check for \$1,500.00 takes her. Complete. P. M. Child, 1110 14th St., N. W., Washington, D. C.



FOR SALE.—Hunting Cabin Cruiser, 27 x 10 x 3, full equipment. New 7½ Miami Engine. A high class boat at a low price, \$850.00. Dr. H. E. Crocker, 105 West 40th St., New York.

Putting 'em Over

The majority of motor boats and cruisers are put overboard during the month of May. This is the time to reach the boat owner with advertisements of accessories, equipments and supplies.

If you think there is, or should be, a demand for your product at this season, MoToR Boating will find that demand, or create it for you.

May MoToR Boating reaches buyers at buying time. It builds sales for those who advertise in it.

Forms Close April 10th to 15th

MoToR BoATING

119 WEST 40th ST.

NEW YORK

THE MOTOR BOATING MARKET PLACE

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.

Opportunities for the Motor Boatman

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Cut one inch deep, one column wide..... \$2
Cut 1 1/2 inches deep, 1 1/2 columns wide..... \$5
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AN OPPORTUNITY

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- 1—54 H.P., 3 cylinder Automatic
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WANTED IMMEDIATELY—60 to 80-foot Cruising Yacht. 3-foot draft; either kerosene engine or oil-fired boiler, to be equipped with two saloons, sleeping accommodations for two persons and usual offices. Crew's quarters, to have one man control if possible; speed 15 knots. Reply Mr. Poynor, 24 State Street, New York City.

FOR SALE—Two 8-cylinder, 225 H.P. Sterling racing engines. Both of these engines practically new, having had about fifteen hours running; equipped with the latest Sterling oiling system, Bosch magnetos and electric starters; at a price way below what you would expect to pay for them. Have also a Smith 20-foot hydroplane hull, complete with wheel, designed for one of these motors, shaft, strut and gearing, which I will almost give away. Address Box 892, Indianapolis, Ind.

Speedy Cabin Cruiser, 40 x 8. Twenty horse, heavy duty motor. Fully equipped. Large comfortable cockpit. On account of securing new boat will sell for a very low price. George Conrad, 246 North Broad Street, Philadelphia, Pa.

FOR SALE—Up-to-date 23 ft. motor speed boat, equipped with 32 H.P., 4-cylinder engine. Has just been thoroughly overhauled and made like new. Owner will consider any reasonable offer. Inspectable at boat shop of D. B. Campbell, Port Jefferson, L. I., or address H. Crosby, 2405 Park Row Building, New York City.

FOR SALE—25 x 5 ft. Modern Runabout Hull, never been in water. Built of Red Cypress, brass screw fastened. Price \$300. John W. Shaw, R. No. 2, Charlevoix, Mich.

FOR SALE—A fine 25 1/2 foot speed boat (solid mahogany), 4 cyl. 24 H.P. motor. Bosch magneto dual system. This boat is equipped like an automobile. Lumber in this boat cost more than the asking price. Owner going inland. W. F. Stock, 43 Dwight St., Springfield, Mass.

Annual Fitting Out Number

Don't fail to use maximum space for your advertising in April Motor Boating—the Annual Fitting Out Number. This is the buying season. Don't neglect it.

FOR SALE—Hunting Cabin Cruiser, "Chequit II" (Lloyd's No. 530), length o.a., 30 ft., l.w.l. 26 ft. 6 in., beam 8 ft. 3 in., draft 2 ft. 6 in. Two-cylinder, 10 H.P. 20th Century motor. Berths for two in cabin, also large ice box, Sands toilet, fresh water tank. Boat has complete cruising equipment, including cushions, dishes, stove, etc. Two copper gasoline tanks, capacity 40 gals. each, located in cockpit. Powerful acetylene searchlight, awning and side curtains for cockpit. Everything in good condition. Inspectable at New Haven, Conn. For price and further particulars address Willard B. Luther, 16 State Street, Boston, Mass.

10 H. P. Vim engine, with Johnson reverse gear, two-cylinder coil. Never been out of crate. Best offer takes it. Thorndike Machine Co., Portland, Me.

GREAT BARGAINS in new and second-hand boats and engines. Write for list. All sizes and types. Lakeside Motor Works, Syracuse, Ind.

FOR SALE—A 25 ft. x 6 ft. open power boat with 6 to 8 H.P. Wolverine two-cylinder gasoline engine. Full equipment, including new folding awning, slip cover, cushions, etc. Price. \$250.00. Address B. L. Lawton, Meriden, Conn.

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OPPORTUNITY TO SECURE PATTERNS, jigs and blue prints, etc., to build this up-to-date 6 x 7, one to four-cylinder, 7 to 35 H.P., 4-cycle marine motor. \$435.00, including new 7 H.P. motor. D. Gray, 26 Rhode Island Ave., East Orange, N. J.

Gray engine, 3 horse, \$25.00 Carburetor and ignition equipment. Just overhauled, condition fine. Ansley Newman, 685 West Ferry, Buffalo, N. Y.

MOTOR BOATING'S Market Place columns offer the buyer and seller of used motor boats, fittings, etc., a quick and convenient medium of exchange. If you are getting a new boat or a new engine, and wish to sell the old one, don't have it rotting, or rusting or collecting storage charges—sell it—in the Market Place. Three cents per word.

8 to 11 h.p. Fex engine, coils and propeller; fine condition; \$80.00. Elmer Calkins, Petoskey, Mich.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

PLEASURE YACHT SACRIFICE. Beautiful new runabout type pleasure boat. Good power. Motor enclosed in bulkhead. Boat run about 200 miles. Every modern accessory. Nothing cheap. A gentleman's outfit fully guaranteed. Full particulars to interested parties. J. Chas. Keegan, Skaneateles, N. Y.

FOR SALE—Runabout, 25 ft. x 4 ft. 6 in., with 20 H.P. 4-cylinder, 4-cycle, "Elco" motor, including "Split-dorf" magneto, "Eureka" safety rear starter, auto steering wheel, with controls and full equipment. Speed 16 miles per hour. Price \$550. Charles Rizzi, 424 West 40th Street, New York.

FOR SALE—20 ft. x 5 ft. 6 in. open motor dory; 4 1/2 horsepower Knox engine, in after cabin. W. and M. reversing three-blade propeller; Sumter magneto; Spray hood and apron covering complete cockpit. Price \$285.00. Complete outfit new in 1915 and never run more than two miles. Address Wm. I. Cranston, 9 Stratford Road, Providence, R. I., Edgewood Sta.

FOR SALE—Cruiser 38 x 9. Excellent condition. Four-cylinder, four-cycle 20th Century 20 H.P. engine. Full cruising inventory. \$1600. A. Shimberg, 68 West 107th St., New York.

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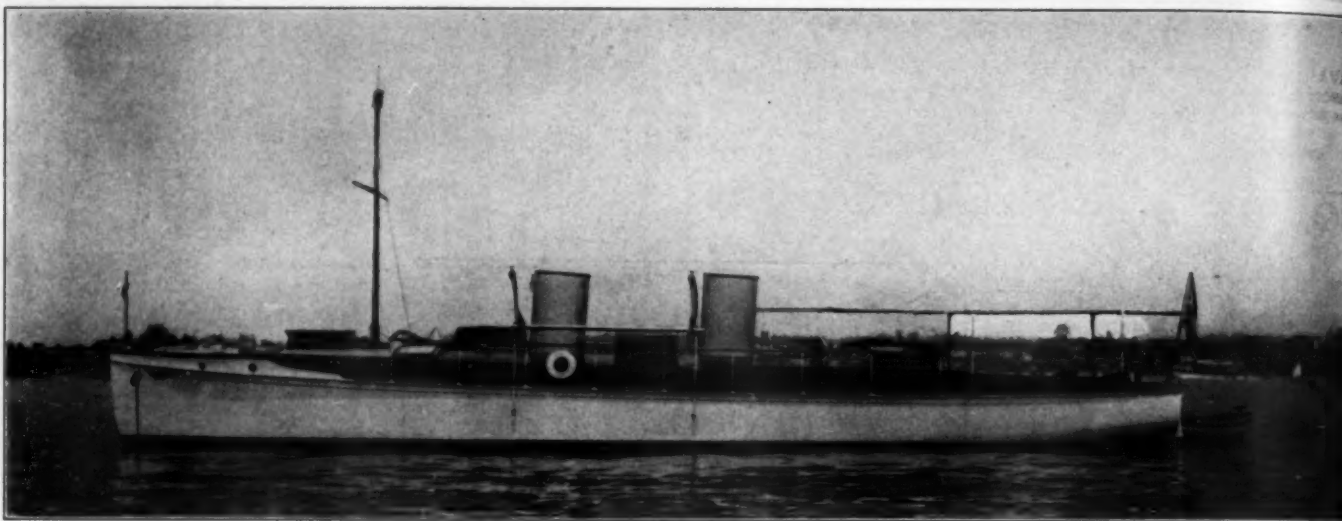
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THE MOTOR BOATING MARKET PLACE

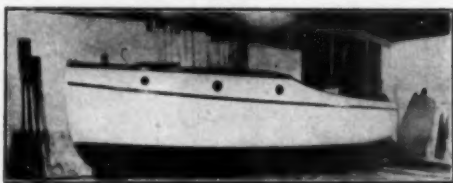
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for the
Motor Boatman**

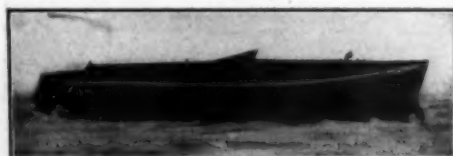
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For Sale—57'-6" by 10'-10" by 3'-6" cruiser; 45 h.p. Sterling motor; designed by Watts; has saloon, stateroom, toilet, galley, engine room and crew's quarters; in good condition; price reasonable. Apply to J. Murray Watts, 328 Chestnut St., Phila., Pa.



FOR SALE—A gentleman's 18 ft. R. Deck Cruiser; like new; fully found. Don't write, call and see the boat and outfit. L. H. Miller, 304 High Ave., Nyack, N. Y.



FOR SALE—25 ft. by 4 ft. 6" runabout equipped with 10-12 H.P. Scrips Motor, Kenyon auto top, Atwater-Kent, completely equipped and in first-class condition. Price.....\$300.00
 1—10 H. P. Heavy duty Monarch Motor, complete with gear..... 75.00
 1—2 cylinder 6 H. P. Gray Motor..... 65.00
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 1—2 cylinder 2 cycle 14 H.P. Gray Motor..... 75.00

Jesiek Boat Co., 79-91 Market Ave., Grand Rapids, Mich.

FOR SALE—One model R-1, 8-cylinder, 6 1/4 x 9, 300 H. P. Sterling motor with electric starter and complete equipment. In perfect condition. Reason for selling, owner is installing larger engine. This is one of the three motors removed from the express cruiser MAROLD. Two have already been sold. An exceptional opportunity to secure a better than new motor at a very reasonable cost. Address: Owner's representative, Capt. Ivan C. Lundblom, care of The Matthews Company, Port Clinton, Ohio.

FOR SALE—Raised Deck Cruiser 33-ft. x 7-ft. 4-in. beam, whaleboat type, electrically lighted, galley, Sands toilet, auxiliary jib and main sail, Navy type awning, brass bows. Niagara engine 18-25 H.P. Hull, engine and equipment excellent condition. Built in Gloucester, Mass. Grand sea boat. Apply for particulars, W. T. Taylor, 93 Broad St., New York City.

BARGAIN—Sixteen-foot, pressed steel, Mullin's Launch. Like new. 7 H.P., 4-cylinder, 4-cycle Imperial Motor, with Berling Magneto, and Snow & Petrelli reverse gear. Has been used only two months and is in fine condition. Price \$150 for immediate sale. G. R. McKee, 131 Riverside Drive, New York City.

\$2,700. 60' \$10,000 yacht; absolutely new construction. Complete with new Kerosene engines, \$3,600. Operating expenses, 3c mile. \$6,000 new 46' yacht, \$1,800—mileage, 2c. 35' cruiser, \$275.00; 24' cruiser, \$175.00. Modern Yacht Co., Bath, Maine.

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Fine Power Cruiser; 30 x 8, built 1914. 20 H. P. motor; speed, 8 miles. Toilet and complete equipment. Built exceptionally heavy. Fine sea boat. Price, \$600.00. A. E. Strobel, 6833 Champlain Ave., Chicago, Ill.

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These engines will be sold for less than actual cost. Write today. No reasonable offer refused.

2—2 cylinder, Model L, Heavy Duty, 8 1/2" Bore, 8" Stroke, 20 H.P.

1—3 cylinder, Model T, Medium Duty, 4 1/2" Bore, 6" Stroke, 15 H.P.

1—4 cylinder, Model H, Medium Duty, 4 9/16" Bore, 6" Stroke, 20 H.P.

1—4 cylinder, Model U, Medium Duty, 5 1/4" Bore, 6" Stroke, 25 H.P.

1—6 cylinder, Model N, Heavy Duty, 8 1/2" Bore, 12" Stroke, 120 H.P.

Tools, ignition, carburetor, clutch, coupling equipment with above.

SECOND HAND

1—1 cylinder, Model 8, Medium Duty, 5" Bore, 6" stroke.

1—2 cylinder, Model U, Medium Duty, 5 1/4" Bore, 6" Stroke.

1—2 cylinder, Model L, Heavy Duty, 8 1/2" Bore, 8" Stroke.

These second hand engines will be sold as is, without reverse gears.

JAGER ENGINE COMPANY, TAUNTON, MASS.

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35 H.P. with carburetor and base for magneto.....\$95.00

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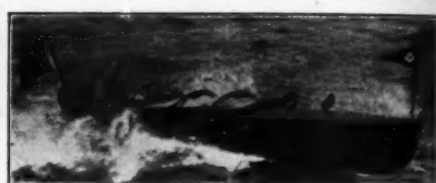
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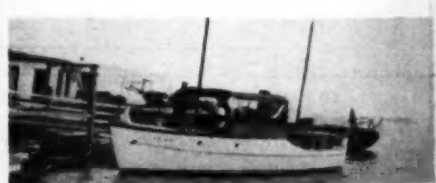
1438 Michigan Avenue Chicago, Ill.

BARGAIN—17 H.P. 3 cylinder 2 cycle, jump spark, Knox engine, Paragon gear, carburetor, propeller, thoroughly overhauled and in perfect condition, \$180. Address B. C. Bixby, Newton Center, Mass., or Camden Anchor Rockland Machine Co., Camden, Me.

FOR SALE—30 H.P. Lamb heavy duty, dual ignition, like new. (Bargain) W. J. Bell, Sault Ste Marie, Mich.



\$47.50 for a limited time, we will sell these seventeen-foot steplike hydroplanes at the above price for complete knock-down boat, which includes mahogany interior and every piece of material necessary to complete the hull. Other models at proportionate prices. Write for circulars. HYDROPLANE CONSTRUCTION COMPANY, Point Pleasant, Kentucky.



No. 917.—For Sale—Twin-screw bridge deck cruiser; 46 x 10 x 3.6 ft. draught. Designed and built by the Bath Marine Construction Co. in 1910. Two 15/20 H.P. motors, new 1912; speed, 10 miles. Accommodations include stateroom, and saloon sleeping 6 people comfortably, toilet room and galley. Also room for man forward. Interior finish mahogany and white enamel. Complete equipment. Electric lights. Has had best of care and is in excellent condition. Very able craft for her size, having cruised to Bermuda and back. Immediate sale desired by owner. Located in New York. Further particulars from Cox & Stevens, 15 William St., New York.

WANTED—Auxiliary yawl about 30 ft. w.l. Must be bargain. Send picture and specification to D. B. Petter, 56 Campbell, Princeton, N. J.

FOR SALE—Hand V-Bottom Launch, 21 ft. x 5 ft. 3 in. Built 1914. Caille's 8 H.P. unit plant, Kreh's patent top. Oak interior finish, fine condition, at attractive price. Frank R. Riggs, 1419 Fairview Ave., Wichita, Kans.

BARGAIN—Motor and outfit used thirty days only in experimental hull. Better than new. Consisting of Waterman 10-12 horsepower, high speed 2-cylinder motor; Kingston carburetor; Henrick magneto; Wilmarth 14 in. x 24 in. bronze reversible propeller; bronze shaft; 10-gallon fuel tank; brass steering wheel; brass electric signal; running lights, etc. A. B. Smith, 2008 Honesywell Ave., Bronx, New York City.

FOR SALE—Two new V-bottom motor boats. One is a fast runabout with top, windshield, chairs and a 4 1/2 in. x 4 1/2 in. motor, rear starter, reverse gear under hatch. Other is good built, half glass cabin cruiser with a 4 1/2 in. x 5 in. Pierce-Budd motor with reverse gear; both motors are 4 cylinders and practically new. Boats will show plenty of speed. Will sell reasonable for cash. Conrad Croutworst, Greenfield, Mass.

FOR SALE—A six-cylinder Sterling Type B 5 1/2 x 6. This engine has been run but little and is absolutely guaranteed to be in fine running shape. First check for \$650.00 takes it. Address Bargain, 252 Court Street, Rochester, N. Y.

BARGAIN—3-Cyl. Smalley Aluminum Speed Engine, 18-24 H.P. Complete Equipment, Reverse Gear, Stirling Box, Strut, Bronze Shaft, and new propeller. Used one season. Cost over \$900.00. First check for \$300.00 takes her. P. M. Child, 1110 14th St., N. W., Washington, D. C.

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New Bedford, Mass., U. S. A.

When the Motor Needs Attention

(Continued from page 14)

will be found extremely efficacious.

When a two-cycle machine has loose main bearings it generally means that you must start the overhaul from the top and work down, thus making it possible to scrape carbon from the cylinder while it is removed from the motor. With a four-cycle machine much labor and time may be saved if the crankshaft is hung from the upper half of the crankcase. With this construction, a motor can be unbolted at the level of the crankshaft and then the entire motor except the lower half of the crankcase can be leaned over to one side of the boat, thus allowing the fullest access to the main and connecting rod bearings without disassembling the entire machine. Even in cases in which it is possible to get at the bearings through handhole plates, if there are many bearings to be adjusted, it will be advisable to do as outlined above. This, and the removal of carbon by burning out, would give a complete overhaul of a motor without any further dismantling.

The accessories should not be neglected. It is well to disassemble the carburetor and examine the float. If it is a cork one it will probably need shellacking so that it will not get water-logged by the middle of the season. Seldom need anything else be done to a carburetor but in an old motor the needle valve might need grinding. Doubtless the ignition system has been protected from the weather during the winter. However, this should be gone over, paying particular attention to the contact points of the magneto or vibrator. True these up with a fine file so as to remove any pit marks. If much has been taken off the points, readjustment may be necessary. A coil may be adjusted by the sound but in the case of a magneto the maker's instructions as to the width of gap should be followed. New spark plugs are cheap and you might find it a good investment to get a new set and hold the old in reserve.

The best ignition system is worthless without good wiring. This is especially so with jump spark outfits and if your wiring appears rather shabby better replace it now, and in substituting new, make all connections to the terminals with solder. It looks better and the service that a soldered connection will give is well worth the extra trouble or expense. Clean out your timer and get all the contacts clean and bright. If it is a roller timer you may find the surface of the fiber metal contact full of ridges. In a slow motor this would hardly affect the running, but if the r.p.m. is high there will be a tendency to jump over the metal contact and thus cause a misfire. This may be corrected by removing the timer and having the contact ring turned down to a smooth surface on a lathe. In addition to truing up the primary contacts, the distributor rings should not be overlooked, if the ignition system includes a magneto or a distributor. It will surprise one to see how dust from the carbon brushes has covered the contacts, thus increasing the resistance of the path perhaps enough to cause misfiring.

Whatever may be done to the motor it should be repainted if the old paint has cracked or burned off. Any one who starts off with the expectation of making his motor look quite as good as new is likely to be sadly disappointed, but with care a fairly creditable job can be done. To do the work well the brass parts should be removed. This gives one a good opportunity to send them away to be buffed, thus restoring their former brilliancy. All the loose paint on the motor should be scraped off and the whole smoothed up with sandpaper. Then every corner and crevice should be made scrupulously clean with the aid of gasoline to remove any oil, as well as any accumulation of grit. Any standard make of heat-resisting enamel may be used and the castings will in all probability be smooth enough so that no iron filler will be needed. After the first coat you will doubtless find many pieces of grit, old paint, etc., in the clean surface. These can be sandpapered out and another coat of paint applied.

Putting the Boat Into Commission

(Continued from page 9)

the second coat. Varnished decks require constant attention and should be revarnished every five to six weeks during the season.

Rails, coamings, cabin houses, etc. Should it be necessary to remove old varnish due to checking, blistering or wear, it can be best accomplished with one of the many varnish removers. Since varnish removers will not take out weather stains it may be necessary to bleach them out as previously described. After the varnish has been removed with a varnish remover clean off with gasoline and then smooth up with fine sandpaper. Should it be desired to apply a stain it should be done before the first coat of varnish is put on. Subsequent coats of varnish are then applied, the work being treated with fine sandpaper or steel wool between each two coats of varnish.

Topsides: Should your boat have several years' accumulation of hard paint on it which is chipped or blistered it will be necessary to remove the old paint. This can best be done with a gasoline blow torch, burning the paint off. When the torch flame is applied to the paint it will blister and soften up immediately, and the torch is moved along and followed closely by a putty knife which strips off all the old paint very quickly and easily, leaving a clean surface. Extreme care must be exercised, however, to see that the torch flame is kept moving, as the wood has a decided tendency to scorch and might even take fire if the operator were careless. The hull should now be cleaned and smoothed off with steel wool and sandpaper when it will be ready to receive its new priming coat. This should be a zinc and lead combination paint thinned with turpentine. The water line should also be marked at this stage in order to insure an even straight line at this point. After the first coat has dried it should be sandpapered to remove any dirt or pimples and then another coat can be applied without thinning. The sandpapering is repeated and the final coat of yacht paint is applied. The process would be the same for any color which might be fancied. When enamels are used the priming and preparation is the same as previously given except that the final coat is an enamel paint, which must be well brushed out and very evenly applied so that it will not form into streaks and drops on account of its heavy consistency. Enamel paints will generally last throughout an entire season and can be washed down

(Continued on page 56)

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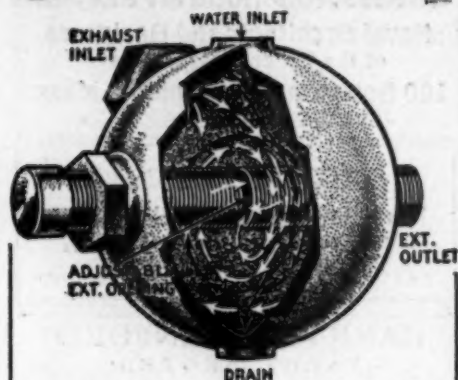
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Guaranteed 1 to 4 Cylinder. 1½ to 10 H. P.

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The Improved Thermex Silencer

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The improved Thermex Silencer is the most efficient silencer ever devised. It has any number of good features, and no bad ones. It is the best silencer you can buy.

Best fire protection. Silencer and pipes beyond are absolutely cool.
Increases revolutions.
No back pressure.
Cannot clog.
Cannot collect salt.

Water can't flow back to cylinder.
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Lightest and most compact.
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Chicago Examiner**

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(Continued from page 55)
as frequently as is necessary without injury to the surface or appearance.

Bottom: This should be thoroughly clean and dry with all seams caulked with white lead putty and properly smoothed off. One of the many anti-fouling compositions, consisting mainly of metallic copper in a paint solution, should then be applied. These paints come in several colors—green, red and brown. The principal thing to remember about them is the stirring, which should be well done before using and should be continued during use, so that the heavy copper deposit can have no opportunity to settle at the bottom of the can. What has been said about stirring applies to a slightly lesser extent to all other paints also. Two coats of bottom paint are generally sufficient. Some men prefer to put the last coat on just before launching, letting the paint harden under water. This method has no advantages and it increases the difficulty of launching for obvious reasons. The bottom paint is generally brought to within a few inches of the water line, which, by the way, is not the actual water line, but a parallel one several inches higher than it. The space between the bottom paint and the white of the topsides is covered with a broad stripe of a contrasting color called a boot-top. If a brown or red bottom paint is used, then the boot-top is made green or vice versa. Another form of finish much favored by some men is to mix bronze powder with spar varnish and apply this to the bottom like paint. This will dry hard and the bronze powder will effectively keep barnacles and marine growths from gaining a foothold.

Interior of cabins: The old paint on the interior of the boat will generally be found to be in good condition and will only require scrubbing down with sapollo and fresh water to remove finger marks, grime, etc. After being sandpapered with fine sandpaper the white work can be given a coat of flat white or enamel as may be preferred. The inside varnish should be treated in the same way and one coat of varnish will probably be sufficient for this also. After the inside of the boat has been painted do not close the cabin up tight and leave it to dry. It should be left open and well ventilated so that the paint can dry hard and firm. It will form blisters and peel if it is left in a cabin without ventilation.

Bilge: The inside of the bilge having been well cleaned and scrubbed out and having had several weeks to dry out in, it should now be ready for painting. One or two coats of good paint of any desired color can now be applied. It is well at this time to see that the timber holes are clear so that there will be no interruption of the free flow of bilgewater to the pump well.

Engine: The engine can now also come in for its share of attention. Oil paints and enamel can be removed with paint or varnish remover. All openings into the working parts should be carefully closed up so that dust or dirt from the sandpapering processes cannot possibly enter into the working spaces. Clean the engine down with gasoline to remove all traces of grease and oil. Then apply two coats of enamel which is made heat resisting and comes in a variety of colors for this particular service. This should be well brushed out since it will crack with the heat if applied too thickly.

Trimmings: All exposed metal parts, such as lamps, railings, wire stays, winch, etc., which are not made of brass can be given a coat of aluminum bronze paint. This will protect them from rust and preserve their appearance, as it is supposed not to tarnish.

Among the Clubs

(Continued from page 37)

Manhattan Corinthian Club Organized

The chief purpose of this new club is to provide a suitable club home and first-class restaurant facilities at a nominal cost; a place where followers of marine sports, who are brought together during the summer, may meet during the rest of the year.

The dues of ten dollars a year for resident members and five dollars a year for non-resident, navy and merchant marine members, are within easy means of all.

Non-resident members are those residing more than fifty miles from New York City. Navy members are commissioned officers in the U. S. Navy, and merchant marine members are officers in the merchant marine.

Arrangements have been made whereby suitable and comfortable quarters are provided at 110 West 39th St., nearly equi-distant from the Grand Central and Pennsylvania Terminals and convenient to subway, surface and elevated lines. The cuisine will be supplied by Bustanoby, arrangements having been made for service at all times and at a schedule of prices calculated to make the club popular.

The arrangements for food and drink are on a strictly cash basis, in order to avoid the financial difficulties so often encountered in projects of this kind. The low membership fees are possible because of the large membership anticipated and the unusual clubhouse and service facilities obtained, which eliminate usual overhead charges.

A member in good standing of any recognized yacht club, approved of by the membership committee, is eligible to membership without the formality of being proposed, seconded and elected.

Applications to join the Manhattan Corinthian Club will be in the control of the membership committee. The invitations are issued by that committee and, those who receive them will receive a membership card, entitling the bearer to all privileges of the club for one year, upon receipt by the committee of the application blank, filled in, and the dues. There is no initiation fee.

American Model Yacht Club Active

At the annual meeting held on Jan 2 the following officers were elected for the year 1916: Commodore, Edward A. Blunkett; vice-commodore, William Coyle; secretary, Philip M. O'Neill; treasurer, Eric Wirth; financial secretary, Frederick Townsend; measurer, H. B. McConnell; fleet captain, F. W. Kasebier; board of trustees, Charles Donnell, Chairman; J. D. Casey and George Winchell.

Several weeks ago a fire started in the locker room, but by the quick action of Assistant Steward Quinn in closing the doors leading to the main club rooms and by the quick response of the Fire Department the fire was confined solely to this room, doing damage to the extent of \$1,000. This will not hinder the plans for the coming season as repairs are now under way, this being made possible by the hearty co-operation of the club members.

The Sixth Annual Ball held at Prospect Hall, Brook-

(Continued on page 58)

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Ethel V., owned by Chas. P. Hanley, Muscatine, Ia.

The owner of this boat won the third prize, \$15.00, in the Valspar Contest—

Here is the letter

MISSISSIPPI VALLEY POWER BOAT ASSOCIATION
Valentine & Company
456 Fourth Avenue
New York, N. Y.

GENTLEMEN:

I first started to use Valspar two years ago, becoming interested in it by noticing the large number of boats on exhibition at the Chicago Motor Boat Show that were finished in Valspar. I procured several cans at the show, and brought them home with me, requesting the man who was then building a boat for me to use the varnish upon the mahogany finish.

When the boat was in the shop, the finish looked fine, but soon after the boat was launched and put in actual use and exposed to the weather, my beautiful mahogany finish began to disappear. The varnished surface, after an exposure to the hot sun, formed into blisters or bubbles, which would crack and break, and leave the surface all spotted. I had the woodwork rubbed down and again varnished with Valspar, only to have the same thing occur. I repeated this operation several times during the summer with the same results, finally becoming so thoroughly disgusted that I didn't even like to hear the word "Valspar."

Last year I placed an order for another boat, and again while at the Motor Boat Show in Chicago I heard everyone talking

about Valspar, and I related my experience with Valspar to several of the boat builders present. They seemed surprised and could hardly believe my statements, and one of them suggested that I must have used something in the filler that caused my trouble. This set me to thinking, and upon returning home I looked up my former boat builder and found that he had used a shellac filler. I then got busy and tried some experiments of my own with various fillers under Valspar, and soon found that all my trouble had been caused by the use of shellac in the filler.



Last year, while Admiral of the Mississippi Valley Power Boat Association, I used my new boat, "Ethel V," in visiting the different clubs along the river, exposing it to all kinds of weather. The boat came through in perfect shape. There was not a crack or blister upon the whole varnished surface, and I received a great many compliments in the course of the season upon the beautiful finish of the boat.

"Ethel V" was finished in Valspar, and as a consequence of the good results obtained, I too, am an enthusiastic Valspar Booster.

Very truly yours,

(Signed) CHAS. P. HANLEY.

CPH/D.

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2nd prize—\$25.00 April "Rudder"

4th prize—\$10.00 April "Power Boating"

35 others received "Honorable Mention"

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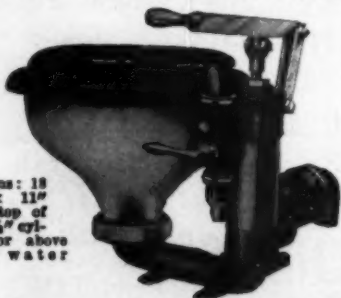
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FIGURE 1404

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Price.....\$25.00

THE J. H. CURTISS CO. 2 South Street, New York

(Continued from page 56)
lyn, N. Y., was voted by one and all as the greatest success ever conducted by the club. More than 450 persons, exclusive of club members, attended and among the merry throng were Commodore O'Day and party from the Excelsior Yacht Club, Commodore Martin and members from the Pilgrim Yacht Club and Commodore Mahken and friends from the Era Yacht Club.

Baltimore News

The Baltimore boatmen are beginning to prepare for the coming season. They have many ambitious plans, and if they are carried out the season of 1916 bids fair to be one of the most active in the history of the Ferry Bar Boat Clubs.

At a meeting of the Ariel Rowing Club held Wednesday, February 16, the President of the Club was authorized to appoint a committee of five to arrange a regatta and carnival to be held at the Club-house the week after Easter.

The members have started work early on the regatta as they intend to make it the biggest ever held by the club.

Owing to the change which has been made by the Western Maryland Railroad Company in the extension of the tracks, the clubs at Ferry Bar now have but one entrance. This entrance is at a point about fifty feet south of the Ariel Rowing Club, and the members of the Ariel Rowing Club, The Maryland Motor Boat Club and the Arundel Boat Club will use the same entrance in order to get to their clubhouses and grounds. The new arrangement will give the watermen more privacy as all the grounds are enclosed with a high board fence.

Along Puget Sound

At a recent meeting of the Seattle Yacht Club, J. E. Chilberg was unanimously elected commodore of the club. Richard E. Morris was elected secretary; Capt. J. S. Gibson, vice-commodore; William G. Norris, commodore season 1915, rear commodore; Henry Hensel, treasurer; Quent H. Williams, fleet captain, and the board of directors consisting of Capt. B. B. Whitney, John T. Heffernan, N. H. Latimer, Miller Freeman, Fred T. Fisher and Scott Calhoun.

Charles T. Boyd was appointed chairman of the committee on entertainments; James V. Pelletier, chairman of the sailing committee, and Daniel F. Pratt, chairman of the motor boat committee.

Cruising Among the Thousand Islands

(Continued from page 12)

give the stranger his first insight into the river spirit.

The Thousand Islands region embraces much of historical interest, and almost every island has its legend, founded for the most part upon fact. You can see the island, not far from Clayton, to which some of the associates of John Wilkes Booth, after the assassination of President Lincoln, escaped across the line with funds stolen from the Ku Klux Klan, and after being cared for by a lighthouse keeper's daughter were one morning found murdered, presumably by members of the Klan; there are many relics of the French and Indian wars, and of the war of 1812; there is the Lost Channel on the Canadian side, where a cutter from a British frigate is said to have disappeared during the war of 1812; and there are many islands where fortune hunters have dug for pirates' buried treasure, for the most part, it must be admitted, unsuccessfully except for the finding of buttons and Indian relics.

As a point of interest of modern times the cruise to Kingston in the Province of Ontario, is well worth while. Kingston lies at the head of the St. Lawrence river, almost where it leaves Lake Ontario, and with the exception of Quebec, is the only fortified town on the river. The old Martello towers of Fort Frontenac, a part of the original fortifications, give an inspiring and almost medieval aspect to the approach from the river. The town was founded by the French in 1673 under the name of Kateracoui and played an important part in the wars between the French and English. It is now the seat of the Royal Military College and just outside of the city is Barryfield, now the principal concentration and training camp for the Canadian troops. It is worth a visit to Kingston to witness the marvelous way the country lads from the provinces are made over, in a few weeks almost, into the best type in the British army, and sent overseas to do their turn.

If you are bound up river from Alexandria Bay some day and your boat is not too large, that is, if she can crawl along over one shoal spot in three feet of water, go by way of the very narrow and tortuous channel known as the Rift, which connects the Lake of the Isles with the main Canadian Channel. The boundary line follows this for about two miles and in one point especially, with the aid of a pike pole you can touch American soil from one side of your boat and Canadian from the other.

There is a little church in this Rift, deserted since motor boats enabled the summer residents to travel greater distances, but which you cannot help noticing when you pass. It was to this church that Will Carleton, upon one of his visits to the river, presented an organ, and went back to his home in Brooklyn without realizing that duty would have to be paid before the instrument could be taken over to the Canadian island upon which the little church is located. A temporary shelter was erected, however, upon a small island very near the church, but upon the American side, and the music itself was imported without the organ until the collection basket, after a few Sundays, contained enough money to move the instrument into the church.

The social life of the Thousand Islands is centered about the Thousand Islands Yacht Club, said to be one of the three wealthiest in the country from the standpoint of dollars and cents owned by its members, and the Thousand Islands Country Club, a separate organization, but controlled by members of the Yacht Club. These clubs are located on different islands, opposite Alexandria Bay, the former being on an island only large enough for a commodious house, a half dozen tennis courts, trees, flowers and the necessary dock space. The Country Club is on a large island and embraces more tennis courts, an eighteen-hole golf course and two polo fields. There are other yacht clubs at Kingston, Gananoque, Frontenac, Chippewa Bay and other points along the river, and some of the inter-club events held during the summer have done much to build up the reputation of the Thousand Islands for the elegance and speed of their motor boats. A member of any recognized club will find

(Continued on page 60)

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Kerosene Oil Engines
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Stationary
Portable

NO GASOLINE, NO DANGER. Maximum Power, Lightest Weight. Simple, Reliable, Economical. No batteries. Self Ignition by Compression. Fully guaranteed. Write for Catalogue M. Crude, Fuel or Kerosene Oil.

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Regular \$100.00 motors at.....\$65.00
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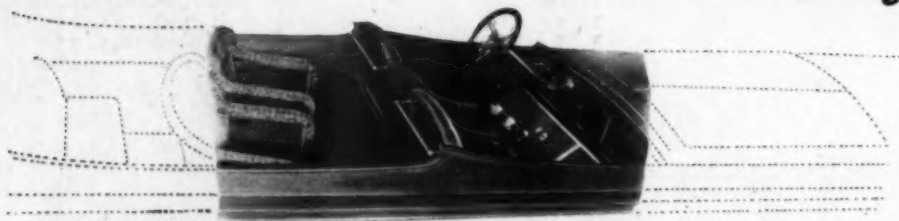
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Easy to Start—Easy to Run. 1, 2, 3 and 4 Cylinders.

MISSOURI ENGINE CO., 2808 N. Eleventh St., St. Louis, Mo.

(Continued from page 58)
himself made welcome at all of these clubs along the St. Lawrence.
Just one word to those who have never been to the Thousand Islands—before you go, and you will sometime, leave word that you will be back at least two weeks later than you really expect, way down in the bottom of your heart, your vacation is going to last. For leaving the River, you will find, is a very difficult thing to make up your mind to do.

Establishing Two New World's Records

(Continued from page 16)

The wind was the least propitious of all of the elements and for the three entire days of the racing it blew from the west and whipped the course into saucy white-caps. Had the course been less protected than the Miami course is, or the officials, spectators or racers less daring or enthusiastic, the chances are the series would have been prolonged well into the succeeding week, as is the practice in some localities we know of. As it was, every event went off like clockwork and on time; in fact, the first race on the first day was started two minutes ahead of time but the boats were there and waiting, the grandstand was full, every committee man in his place, so why not?

The feature of the regatta was the express cruiser events and these surpassed anything which has ever been held in this country for this type of boat. It clearly brought out the possibilities of the fast cruiser from the racing standpoint, not only from the contestants' point of view, but from the spectators' as well. Racing enthusiasts in all parts of the country had been closely watching the plans of the Miami Committee in this, the pioneer effort of featuring express cruisers and it is now probable, in view of the success achieved here, that classes will be arranged for express cruisers in all of the larger racing events of 1916.

The course at Miami is oval in shape and 2 1/4 miles in length. It is one of the few race courses of the country that really can be called ideal. It has a good depth of water over its entire length, being especially dredged to an even depth throughout. It is buoyed practically all the way around the oval which is an advantage not only to the driver of the racing boat but to the spectators' boats, as it prevents crowding on to the course and interference with the racers. While a course as short as 2 1/4 miles to the lap does not tend to the greatest speed, yet the reduction from the possible maximum is not appreciable except with the fastest boats. A short course has the advantage of keeping the contesting boats always in full view of the grand stand which is a point worth while, especially at Miami with its immense stand seating several thousand.

All of the races this year took the form of heat races, that is, three heats were necessary to decide the winner in each class. Scoring was on the point system, whereby a boat received each day one point for finishing and one point for each boat defeated. The total number of different boats starting on any of the three days were considered racing each day and the points figured accordingly. The races were all scratch events without handicaps or time allowances so that the first boat home won.

In the class for open displacement boats the performance of Albany is deserving of special mention. This boat, a 32 x 6-foot 5-inch Hacker design, powered with a four-cylinder 5 1/2 x 6-inch Van Blerck motor, showed remarkable efficiency. She ran each day with the regularity and smoothness of an eight-day clock and there was little or no variation in her lap by lap performance. That a boat of this size and weight, which is a stock proposition and not a mere racing machine, can run so regularly and maintain a speed of better than 30 miles an hour speaks volumes for the all-around design of the hull and the amount of power and endurance qualities of the motor.

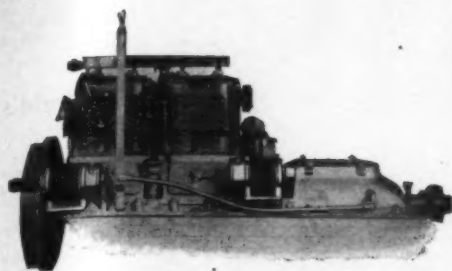
Wizard, Carl Fisher's displacement racer of which great things were expected, was a sad disappointment. The first day after running around the course in fine style before the race was called, this boat absolutely refused to perform when it was time for the race to start. Something went wrong internally, the self starter lay down, the craft drifted broadside to the seas which came aboard and gave everything a good wetting down while the engine hatch was open, and as a fitting climax, Wizard drifted in against the sea wall in front of the grandstand, and some score of spectators rushed to her assistance and managed to hold her off until a two-cycle put-put finally came to her rescue and towed Wizard to safety.

The second day Wizard's clutch was reported slipping and she couldn't be made to come up to speed although she averaged 29.6 miles an hour in the 15-mile race.

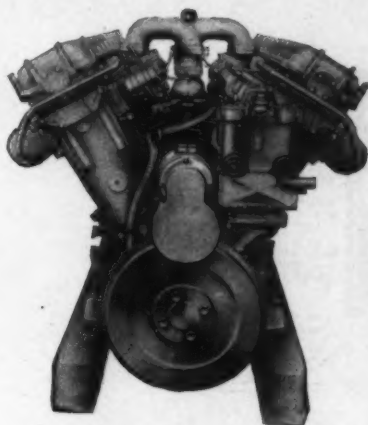
In the next day's heat for the open displacement boats, Wizard seemed to come into her own and in this event which was eight times around the 2 1/4-mile oval for a total distance of 20 miles, Wizard led for practically the entire distance, although Albany was close astern during the course of the event. It was one of the prettiest races from the spectators' standpoint of any during the week, for it almost invariably happened that Albany would lead on the back stretch which was in sight of the grandstand, but she would be overtaken by Wizard coming down the home stretch and gradually nosed out before the line in front of the judges' stand was reached. When the mathematicians with their slide rules got busy it was found Wizard was only averaging 28.6 miles an hour or over a mile less than her record of the previous day and Albany's speed was down to 28.5 miles an hour or more than 2 miles below the record set in the second heat of the series Albany was obliged to run in this race without the services of her high-tension magneto, depending entirely upon battery ignition which caused this reduction of 2 miles an hour in her speed and lost her first place in the third day's race. However, as she had finished first in the two previous days' races and scored a total of 14 points while Wizard had failed to finish in the first race and thereby winning only 9 points, the event was awarded to Albany. Alma, an open displacement boat owned by Nicholas Metzner, took second, the first day, and third place on each of the two following days, winning a total of 10 points and second prize for the heat.

In the express cruiser class it was a pretty race between Betty M., Boomerang and Sayonara. These three boats were very evenly matched as regards speed. Sayonara appeared to be slightly faster on

(Continued on page 62)



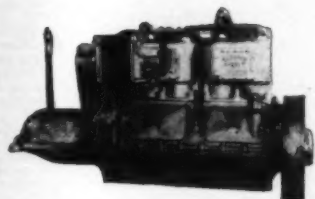
Buffalo



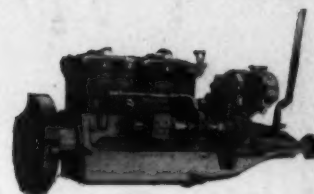
Van Blerck



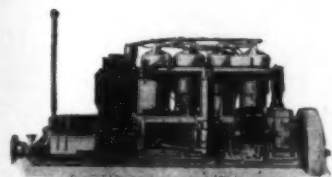
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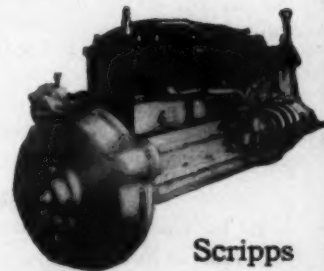
Buffalo



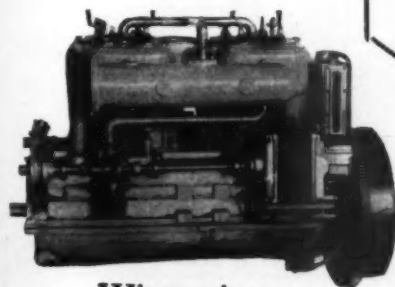
Gray



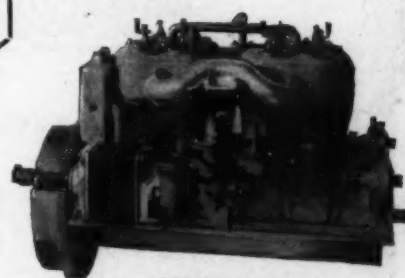
Loew-Victor



Scripps



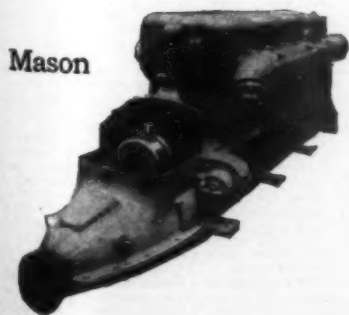
Wisconsin



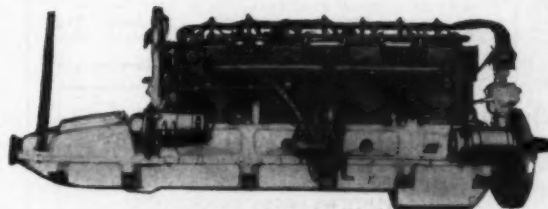
Wisconsin



Ferro



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(Continued from page 60)

the straightaways, while Betty M made the turn in fine style, and more than made up for any advantage gained by Sayonara between the two boats and if she once got ahead at the start, every ounce of power was necessary to overtake her. Boomerang's owner, not to be outdone by Betty M and Sayonara, replaced his motor immediately after the finish of the series races with one of slightly greater power and challenged the other two boats for an ocean race from Miami to Key West, a distance of about 160 miles. This slight increase in power of Boomerang's engine was just enough to give her an advantage of 3 minutes over Betty M in the 160 mile race. Betty M is a 48-footer, owned by Commodore Charles Kotcher, of Detroit and Miami. She was designed by Carlton Wilby and built by the Carlton Boat Co., and is powered with two six-cylinder, 5 1/2 x 6-inch Van Blerck motors. She is one of the most modern types of express cruisers, and her designer has banked his hopes on the round hull type of underbody. Boomerang is a 37-foot Hand V-bottom cruiser, very similar to Flyaway III. In the series races she was powered with an eight-cylinder 5 1/2 x 6-inch Van Blerck motor and in the ocean race she had an eight-cylinder 6x6-inch motor of the same make. Sayonara is the old Shadow formerly owned by Carl Fisher, but now owned by James Deering. Her power plant consists of two six-cylinder Speedway motors.

Betty M. finished first in each of the three boat races of 10, 15 and 20 miles each, respectively. In the first day's races Betty M's average speed was 23.1 miles an hour, a world's record for this type of boat. The best previous performance for express cruisers was that of Flyaway III in the express race held last summer by the Columbia Yacht Club of New York City. In this race which was 120 statute miles in length Flyaway III's time was 5 hours 56 minutes, 45 seconds, or an average speed for this distance of 21.7 miles an hour. While it is hardly fair to compare a speed made in a 10-mile race with that made in a race of 120 miles long, yet even in a short distance it is very evident that Betty M is at least one mile an hour faster than Flyaway III ever was.

In the next day's races Betty M bettered the record of 23.1 miles an hour, established by herself, by over a mile an hour. In this race, which was 15 miles in length, her speed was 24.4 miles an hour. Sayonara found the turns too much for her and, after following in Boomerang's wake for a few rounds, she deliberately slowed down and was content with third place. In the second day's race this boat started off in fine style but something went wrong with her circulating pump and Sayonara withdrew shortly after the start and did not put in an appearance again throughout the week. Carl Fisher's Shadow and V-bottom cruiser Miami were hopelessly outclassed and, after being allowed to go around the course a few times, were called in by the judges on each of the days.

A summary of the results follows:

EXPRESS CRUISER RACE

Boat	1st Day, 10 Miles		2nd Day, 15 Miles		3rd Day, 20 Miles	
	Elapsed Time	Speed M.P.H.	Elapsed Time	Speed M.P.H.	Elapsed Time	Speed M.P.H.
Betty M	25:56	23.1	36:56	24.4	49:37	24.2
Boomerang	26:50	22.4	39:56	22.6	50:40	23.8
Sayonara	27:08	22.1	D.N.F.	....	D.N.F.	....
Shadow	31:09	19.2	Called in	...	Called in	...
Miami	D.N.F.	....	Called in	...	Called in	...

Summary of points: Betty M.—15; Boomerang—13; Shadow—9; Sayonara—3.

Owners: Betty M., Charles Kotcher; Boomerang, Huston Wyeth; Sayonara, James Deering; Shadow and Miami, Carl G. Fisher.

OPEN DISPLACEMENT CLASS

Boat	1st Day, 15 Miles		2nd Day, 20 Miles		3rd Day, 25 Miles	
	Elapsed Time	Speed M.P.H.	Elapsed Time	Speed M.P.H.	Elapsed Time	Speed M.P.H.
Albany	22:49	26.3	29:24	30.6	42:02	28.5
Alma	27:52	21.8	33:58	26.5	46:39	25.7
Wizard	D.N.F.	....	30:24	29.6	41:55	28.6
Vibora	D.N.F.	....	D.N.F.	....	D.N.F.	....

Summary of points: Albany—14; Alma—10; Wizard—8.

Owners: Albany, Bert Southall; Alma, N. Metzner; Wizard, Carl G. Fisher; Vibora, James Deering.

OFFICIALS

Chairman of Race Committee, Carl G. Fisher, Indianapolis, Ind.; Judges, O. J. Mulford, Detroit, Mich.; E. C. J. McShane, New York City; Kirk Munroe, Cocoaanut Grove, Fla.; Starter, James Nichols, New York City; Timer, P. O. Ritchie, Indianapolis, Ind.; C. F. Chapman, New York City.

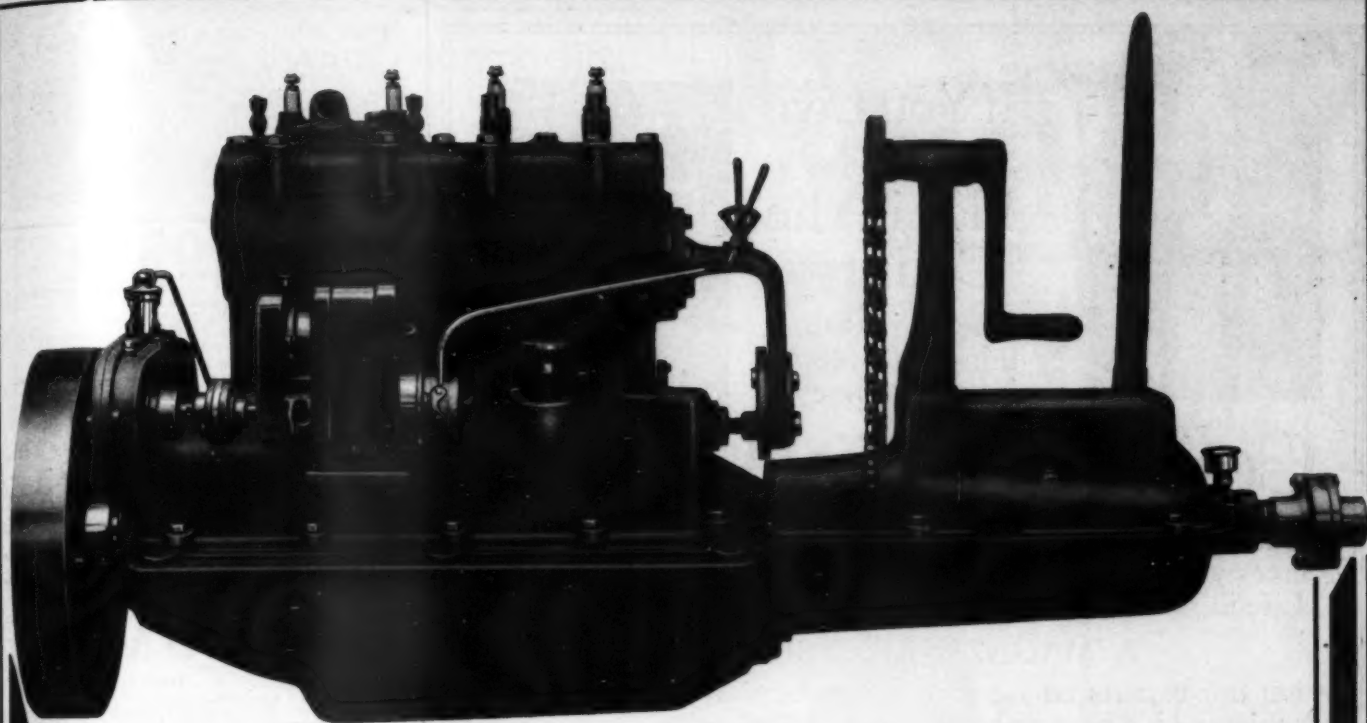
Yard and Shop

(Continued from page 42)

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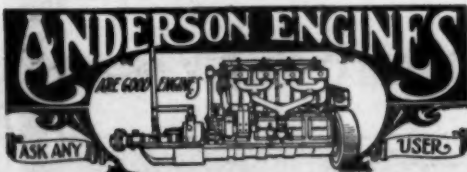
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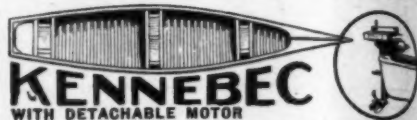
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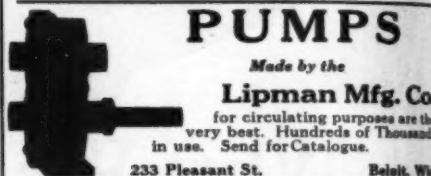


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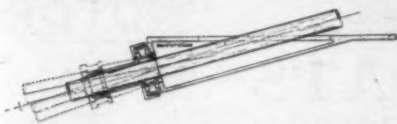
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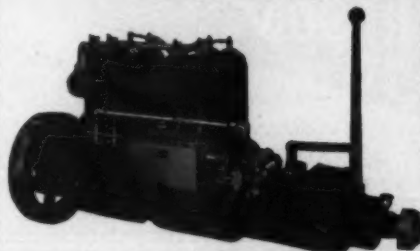


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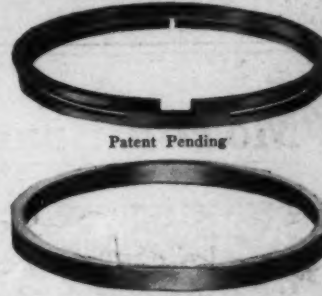
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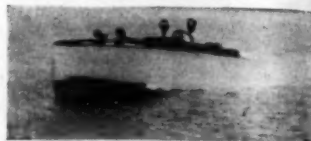
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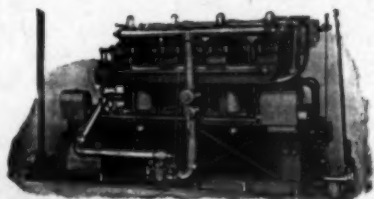
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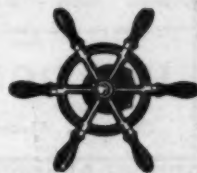
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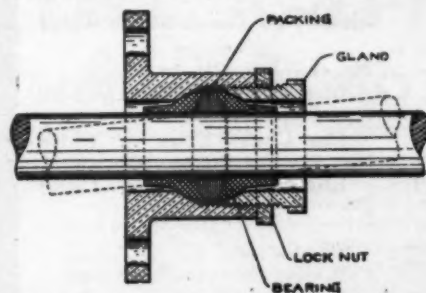
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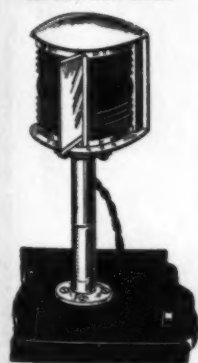
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Sizes from 3 to 300 H.P.

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Bow Light is mounted on a detachable socket which can be used as a flag pole socket when lamp is not in use.

Light, complete as illustrated, extreme height, 10 in.; width, 4 1/4 in. Cash Price.....\$6.95

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4 Cylinder 4 Cycle
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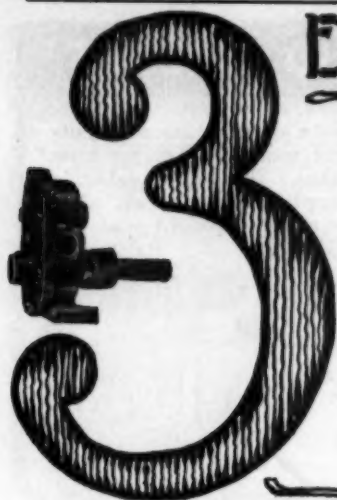
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Manganese bronze or cast steel. Write for descriptive folder and blue print.
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Essential Features You Can Depend On

A water pump which doesn't do all three of these essential things—unfailingly—isn't properly adapted for a marine engine. The

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- 1st—Distribute water in exact proportion to engine speed.
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The Oberdorfer Pump is built especially to do these three things. It is just the pump for a marine engine, especially if you value the engine too highly to take chances with an unreliable pump. You can install the engine above the water line, without worrying about the cooling water. It will start when the engine starts, pump as fast as the engine speed requires, and insure a properly cooled motor always.

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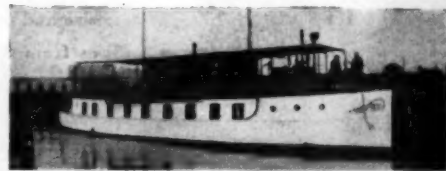
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The 10-in-1 Strainer has ten times as large a straining surface as any other strainer of the same pipe size.

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Sold by all leading dealers and supply houses.

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Shallow water FISH BOAT \$22.00



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Rowboats built and designed for Detachable Motors \$35.

We ship to you direct, eliminating agents' and dealers' profits. Our 16, 18 and 20-foot launches are guaranteed to stand the test of comparison in grace and symmetry of design, in substantial construction, in reliability of material and in perfect finish with boats that are selling at prices 25 to 50 per cent higher.

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Racine^{wis} Motor Boats

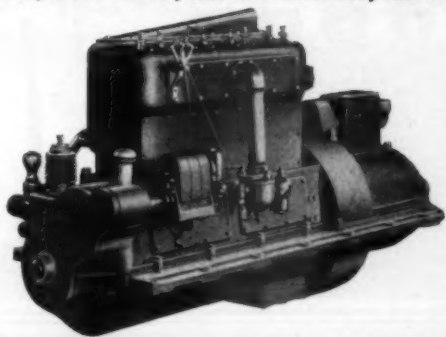
and cruisers are used by U. S. Government in Life-Saving and Lighthouse service, by foreign governments, by institutions and individuals everywhere. *Racinewis* is a name backed by twenty-one years of boat building skill. It means speed, power, comfort, safety and dependability in boats.

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THE best designed four-cycle engine made. Strictly high-grade, modern throughout. Bosch ignition and Bosch electric lighting and starting system supplied. Furnished for burning kerosene, distillate or other low grade fuels, if so specified in order.

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Miller Portable Motor

with positive reversible propeller.

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Proved service capacity at high speeds—this is the "NORMA" characteristic which explains why you would have difficulty in naming a magneto, a lighting generator, or a starting motor, with an established reputation for serviceability, in which "NORMA" Ball Bearings are not the standard—used in preference to all others. Such accessories as these add value to any boat or engine.

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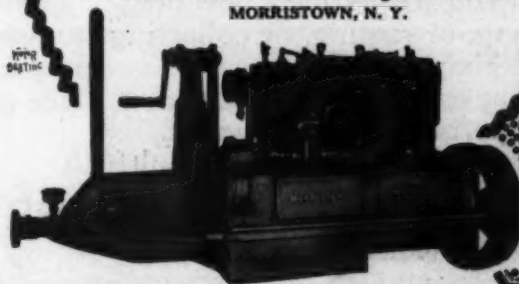
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Vim Motors are standing the test of constant use—they are delivering efficient, continued and uninterrupted power at a low cost of oil and gasoline. They start easily and quickly and absolutely cannot back-fire. There is a Vim for every purpose—speed—pleasure—heavy duty.

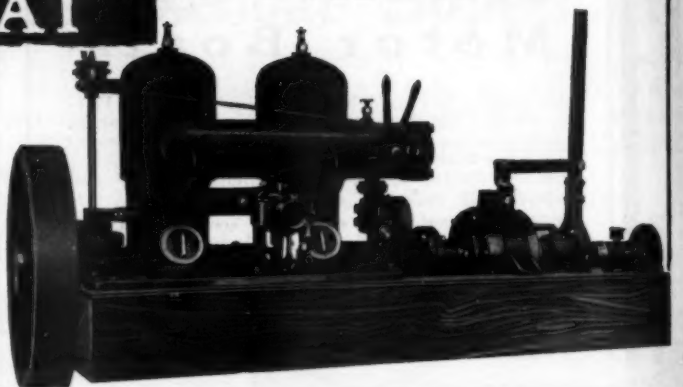
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Medium speed Motor 10 H.P. and
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FOR EFFICIENT, RELIABLE
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THERE ARE NONE BETTER.

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Try this Market—it is resultful.

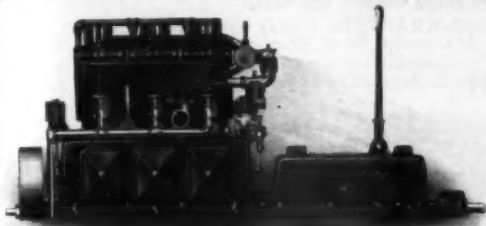
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Wright Engines give 20 to 25% more power than other motors of the same bore and stroke.

Boach Dual Low Tension Magnetic Make and Break Ignition.

Furnished with two bronze fuel pumps, which insure the proper level and feeding of the fuel at all times. The fuel tanks can be placed anywhere in the boat.

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6 x 7 1/2" runs from 400 to 550 R.P.M.
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Built Especially for Canoes and Light Boats

3 H. P.
45 LBS.



18 Ft. Canoe
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Speed 20 Miles

These motors are light, at the same time strong, accomplished by using Semi-Steel Castings, and High Carbon Steel Shaft, Bronze Bearings and High Class Workmanship. Also manufacture

The Famous 3 H. P. 30 Lb. Copper Jacket Motor.

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Built in four sizes, for transmitting from 1 1/2 H.P. per 100 R.P.M. to 225 H.P. for 1500 R.P.M. Iron or aluminum case.

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If you want more speed and efficiency out of your boat without going to the expense of a new engine or other elaborate equipment why not put your problem up to us? For years we have had a standing guarantee to increase the speed of any boat 1 to 3 Miles per Hour with a new

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The B & B Propeller must be unusually efficient for we have been making this money-back guarantee for the past seven years and have never had occasion to regret it. You can try one of our wheels without any chance of dissatisfaction or loss; we take all the risk.

Bryant & Berry Propellers are made of a special bronze, as strong as steel, and are accurate in workmanship, pitch and balance to the highest possible degree. The name "Bryant and Berry" is stamped on the hub of every genuine B & B wheel.

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BEYOND dispute, the simplest motors on the market today.

Only three moving parts—piston—connecting rod—crank shaft.

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8 H. P. Guaranteed

50% Better Than Ever Before

Snappy as a bantam with power and speed.

Makes higher speed and throttles to lower speed than any 8 h.p. engine we know.

Lightest in Weight for Power Developed

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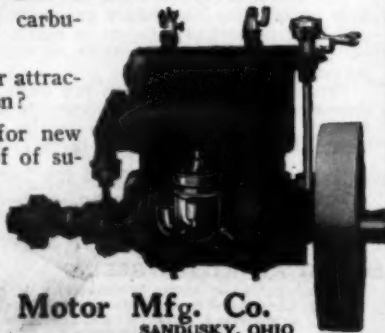
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WICKER-KRAFT

YACHT FURNITURE

For the better class of pleasure boats the suitability of the interior furnishings is fully as important a detail as the power equipment or the general plan of the boat. It is just as essential to the owner's pleasure, comfort and pride. And the difference in cost between the ordinary and the genuine Wicker-Kraft is so slight that there can be no reason for going without the best.

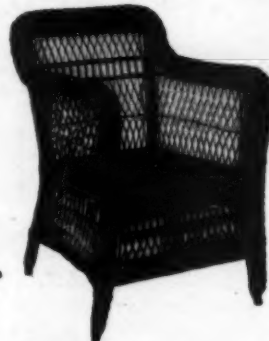
WICKER-KRAFT IS USED ON THE FINEST BOATS.

We are proud to number among our regular customers such well-known builders of high quality boats as Lawley, Seabury, Luders, Elco, St. Louis, Niagara, Fay & Bowen,

Matthews, and many others of the same class. A list of the boats furnished with Wicker-Kraft would include many of the best known motor boats and finest yachts in America.

Wicker-Kraft Furniture is the correct thing for all sizes and types of pleasure boats. We have special designs for canoes, rowboats, express runabouts, launches, day cruisers and cabin cruisers.

The popular idea of enclosing a life preserver under the seat of the chair is an original Wicker-Kraft feature. All genuine Wicker-Kraft furniture has been designed and manufactured especially for boat use and is the most durable and comfortable furniture for marine service. Write today for complete illustrated catalog and prices.



See Life Belt in Place

WICKER-KRAFT CO.,

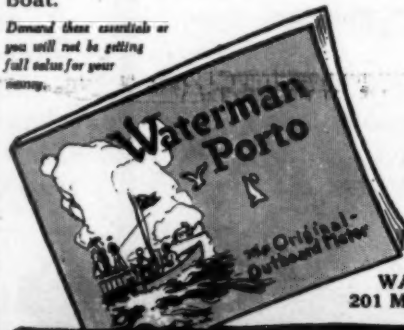
H.G. PRATT, Proprietor
Newburgh New York, U.S.A.

10 NEW FEATURES

in the 1916
Waterman
Porto

Our new catalog describes in detail all the latest features of the 1916 Waterman Porto, including built-in high tension fly-wheel, magneto, unlimited speed control, automobile type carburetor, double capacity fuel tank, larger bearings, newly designed pump, etc., etc. The Waterman Porto has the perfect speed control of an automobile. Simply shift lever to get any speed desired, forward or reverse. Wonderful flexibility. You can stop your boat in half its length—dock without stopping your engine. Trol at any speed with any type or size of boat.

Demand these essentials or you will not be getting full value for your money.



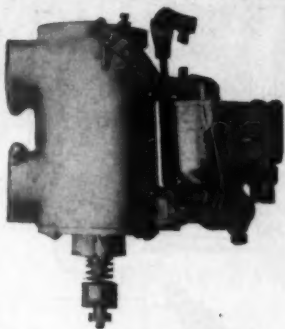
Send for this book
today

You will find it full of valuable and interesting information about the new features of this original outboard motor, and it also tells the story of the first outboard motor ever built.

WATERMAN MOTOR COMPANY
201 Mt. Elliott Ave., Detroit, Michigan

If you own a
gasolene engine
of any type—

Marine,
Stationary,
Automobile
or Tractor—



The H & N Hampton Duplex Kerosene Carburetor

will save you at least 50 per cent. of your fuel bill.
Gasolene, 30 cts. a gallon. Kerosene, 10 cts. a gallon.
Equally efficient on Kerosene or Gasolene.

The average consumption of a gasolene or kerosene engine is one pint per horse power per hour.

EXAMPLE

A 50 h.p. engine consumes 62½ gallons in 10 hours
62½ gallons of gasolene at 30c per gal. is \$20.10
62½ gallons of kerosene at 10c per gal. is 6.25
Saving per day \$13.85
or \$4,055 per year of 300 working days.

The Carburetor will cost installed less than \$75.
The same proportionate saving can be shown on your engine. Sold under positive guarantee of satisfaction or money back.

One simple adjustment. Send now for catalog "B."

THE H & N CARBURETOR CO., Inc.
1790 Broadway - - - - - New York



Get More Power and Speed on Less Gasoline!

HOW quickly you would stop a leak in your gasoline tank!
Now stop the waste of fuel in your cylinders. See where
the arrow points to the side lock and groove—that's why

K-P Rings
Save
Gas!



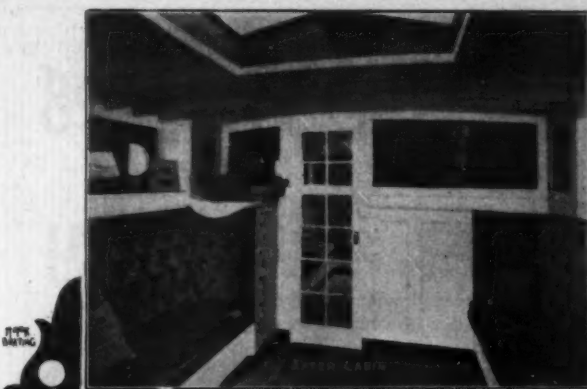
The joint ends are held tight with side lock. Holds gas in explosion chamber. Compression tight. Leakage proof. Flexibility reduces wear. Will not score cylinders. Ride ported engines without pinning. No equal for marine engines. 25% more power. 25% more speed. We'll prove it to you. If you want more speed and power without buying a new engine, write us.

"Reg. U. S. Pat. Off."



KEYS PISTON RING CO.

3031 Olive Street
St. Louis, Mo.



GRAY Yacht Furnishings

If you have the furnishings and appointments of your yachts supplied by Mr. Henry Gray you may be sure of that excellence of taste, of workmanship, and the close personal supervision which has characterized his work on many of the finest power boats and yachts in America.

The illustration above shows one of the many beautiful cabins furnished by Gray.

Upon request I will design and submit preliminary sketches and estimates for completely furnishing a yacht in any part of the United States, or will supply single pieces of plain or upholstered furniture, mattresses, cushions or draperies at short notice.

Write today sending plan or other information for preparing estimate.

Henry Gray, 26 Broad St. Boston, Mass.

Make Your Boat an "All Weather" Boat

The top is usually the first thing that is noticed about a motor boat and when absent it's usually the first thing that's missed. A top either makes or unmakes the looks of any boat. You can be sure of having a top that will improve the appearance of your boat wonderfully and increase its usefulness about 100 per cent, if you use a

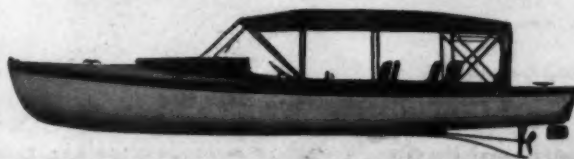
Kenyon Boat Top

Kenyon Tops, Spray-hoods and Cockpit Covers are made to fit your boat of light, but flexibly strong material. The tops fold easily and quickly on a frame-work of rustless, enamelled steel tubing. Whether you live next door or a thousand miles away, it is easy for you to get a Kenyon Top to fit your boat.

Just send for a Kenyon catalog—we will do the rest. Prices reasonable—deliveries prompt.

Kenyon Cushions covered with Marroceline, that looks and wears like leather, filled with soft, silky Kapoc, add greatly to the comfort of boating and can be used as life preservers in emergencies. Kenyon Pillows and Cushions are fully described and priced in the Boat Top catalog. Write today.

THE R. L. KENYON COMPANY
534 Meadow Street Waukesha, Wis.



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.
Advertising Index will be found on page 43.



"Never Fails to Grip"

This "Bull-Dog" Stands for Reliability

Absolute and unqualified reliability is the first essential in a reverse gear. Among many other advantages, reliability is the predominating characteristic of the

"Bull-Dog" Reverse Gear

Reliability was our first thought in designing the Bull-Dog. The type of construction, the materials used, the margin of excess strength—all contribute to this end.

The Bull-Dog will remind you of two well-known bull-dog traits. It "never fails to grip," and it hangs on until it wins out, no matter how big a job it tackles.

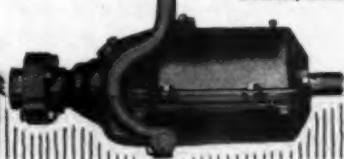
This gear will outlast your capacity, more compact, and more accessible than Satisfaction guaranteed

Four sizes. Iron or Aluminum Case. 1 to 64 H.P. per 100 R.P.M.

engine. It is smaller for its simpler, lighter in weight any other reverse gear. or money refunded.

Write today for catalog with prices.

Kennedy Machine Co.
45 Fort Street, East,
Detroit, Mich.



W. & J. Tiebout
118 Chambers St.
N. Y. City

Marine Hardware

Established 1853

Send Postal for New 1916 Catalog

B

9-12 H.P.-ARISTOCRAT

Positively the Latest in Modern Motor Design and Construction
A Special Feature

GUARANTEED PATENTED ENGINE STARTER

Designed to make engine starting a pleasure.

The Aristocrat is the only engine that a girl can start with ease.
4 CYLINDER, 4 CYCLE; 12 H.P. AT 1500 R.P.M.

\$160.00

EQUIPMENT

Patent starter
Dixie high tension water-proof magnet
Kingston carburetor
Lobee water pump
Standard reverse gear
Sight feed oil gauge
Designed specially for perfect balance and freedom from vibration.



SPECIFICATIONS

Number of cylinders, 4
Diameter of cylinders, 2 1/2
Stroke of pistons, 4
Diameter of flywheel, 11
Weight of engine, 290 lbs.
R.P.M., 300-1500
Diameter of propeller shaft, 7/8
Standard propeller, 14x14-3 blades
Enclosed valves, all adjustable
Water-jacketed exhaust
Taper fit for flywheel
Cylinders cast en bloc
Lubrication, pump and splash

Good proposition for live agents in uncovered territory

The Herrmann Engineering Co.
654 Franklin St., Detroit, Mich.

Help Your Dealers by Advertising

Up-to-date manufacturers do not consider their product sold when it has only reached the dealer. They follow it through until it is in the hands of the consumer.

MoToR BoatinG is the most tangible dealer aid known in the marine trade. All the best dealers read it regularly, and they see what is being done for them in the way of advertising by the manufacturers of the products they sell.

Advertising creates retail sales, moving your goods off the dealers' shelves so that they can reorder from you. It carries direct to the buyer the selling arguments which otherwise might never reach him.

Whether you sell your product direct to consumers, or through dealers, advertising in MoToR BoatinG will reduce your selling expense.

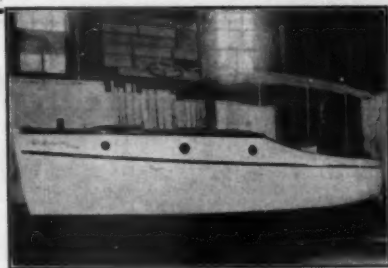
Advertising forms for May
issue close April 10th to 15th

MOTOR BOATING

119 West 40th Street

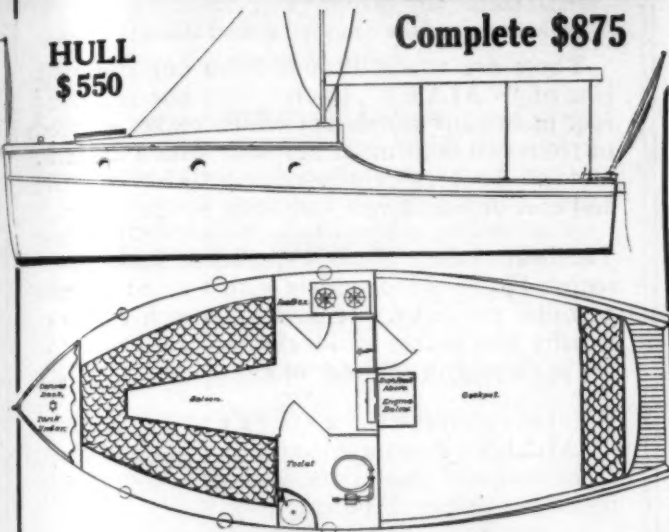
New York

21 FOOT STOCK CRUISER



HULL
\$550

Complete \$875



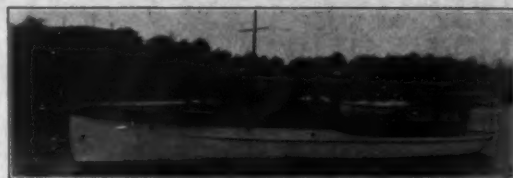
Biggest Little Raised Deck Cruiser Afloat.
21' x 8'. 16-H.P., 4-Cylinder, 4-Cycle Motor.

FULL HEADROOM

Toilet and Galley. Cushions, Awning and Side Curtains.
Full Equipment, Ready to Cruise.

LEE H. HARRIS, Room 403, 143 W. 40th St., N.Y.C.

DEFOE BOATS



"Mariner"—Recently Launched from Our Factory

If you enjoy working with tools and want an open launch, build it with your own hands, starting with one of our K. D. frames. You can build the finest 25 ft. launch from the K. D. frame and equip it with power for less money than you would have to pay for the cheapest 18 ft. launch on the market.

Experience in boat building is entirely unnecessary. We do the boat builder's part.

Do you want a cruiser? With the help of one or two hands, the spare time of the ordinary professional man or mechanic, if put to use during the winter and spring months, is sufficient to build one of our largest cabin cruisers. We send you the hard parts all done. You will have, when completed, as fine a boat as turned out by any factory in the land. You can build a 50 ft. cruiser, and equip it with power, for less money than you would have to pay for the cheapest 30 ft. finished boat on the market.

People of limited means buy these K. D. boats, do the work themselves at spare times and save three-fifths of the cost. People of wealth buy them, hire them finished by local hands in their home city, where they can see every piece of timber that enters the construction, plan every detail of the interior as the work progresses, and yet save half the cost.

Our Completed Boats

Our K. D. boat department gives us unusual advantages in the manufacturing of finished boats also. Give us an opportunity and we will prove to you conclusively that the manufacturer of finished boats only cannot meet our prices on finished boats and still turn out the high grade of work that we do. We launch from our factory every season some of the finest boats built, and we only ask an opportunity to prove the claims we make.

Send for our catalog and tell us the size and type of boat that you are interested in and whether you wish to build from a K.D. frame or buy the finished boat.



A Cruiser Frame ready to take apart and crate for shipment.

DEFOE BOAT AND MOTOR WORKS

4235 State Street

BAY CITY, MICH., U. S. A.



Built for Semi- and High Speeds

Whether for semi-speed or high speed work, greater effectiveness can be realized by using a propeller of proper design—not the ordinary types but one that is the result of scientific study and tests—a "Shaw."

The "Shaw" Centripetal Propeller is so designed as to eliminate any centrifugal action of the water particles as they pass through the zone of the propeller's activity—a straight, powerful thrust in the direction of travel results—no counteracting resistance.

The great efficiency of the Shaw can be applied to your boat—small or large. There is a size for every particular requirement. The "Shaw" merits your careful investigation and our circulars will interest you.

Write today for full information and prices.

THE SHAW PROPELLER CO.
15 ELKINS STREET BOSTON, MASS.

More Pleasure From Your Motor Boat

You practically double the pleasure of motor boating when you have the same perfect control over your engine as the automobile driver enjoys.

There's a world of satisfaction in being able to stop, reverse, or go ahead instantly as desired—in knowing that your boat is under perfect control at all times. And then when you get in a tight place—when there is danger of accident—your reverse gear, if it is the reliable kind, is a priceless addition to your outfit.

Baldridge Reverse Gear

Baldridge reliability has been proven by years of service.

It has but one main shaft, extending from bearing to bearing—it cannot possibly sag, wobble or get out of alignment.

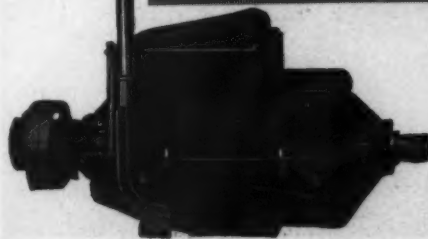
The Baldridge "idles" perfectly. It carries far greater overload than its rated capacity. Gears are completely enclosed and perfectly lubricated.

Double expansion clutches with reinforced reverse bands—gears heat treated and hardened by scientific modern methods.

Get the Baldridge Book today—you owe it to your motor boat.

BALDRIDGE GEAR COMPANY
238 Mt. Elliott Ave. Detroit, Mich.

"The Gear with the unbroken Main Shaft"



Eastern Representative:
BRUNS, KIMBALL & COMPANY
115 Liberty St.,
New York
Bourse Building,
Philadelphia
Export Office:
47 Broadway,
New York, N. Y., U. S. A.

STEARNS-MCKAY

MARBLEHEAD

ANTI-FOULING GREEN

BOTTOM PAINT

FOR STEEL OR WOOD

STAYS CLEAN



FOR CRUISING YACHTS,—you must have a clean, hard, slippery surface under water. A foul underbody often reduces speed 50% and doubles the cost of running.

Marblehead Anti-Fouling Green or White has a hard, smooth finish, it lasts a long time and it stays clean. It is a powerful wood preservative, saves heavy expense for hauling out, re-painting and repairs, and it covers twice the surface, cutting the first cost in half.


ON STEEL YACHTS, it is not a copper paint and has no galvanic action in the salt water; this is of the first importance on metal bottoms.

FOR RACING,—it takes a wonderful hard, slippery polish and helps you win the race.

STEARNS-MCKAY MFG. CO.
MARBLEHEAD MASS U.S.A.

APELCO

THE PIONEER OF
MOTOR BOAT
ELECTRIC LIGHTING SYSTEMS



Apelco B-2 Motor Boat Electric Lighting System

The APELCO SYSTEMS are furnished in three different sizes known as Model B-1, B-2 and B-3. WE MUST KNOW flywheel dimensions, r.p.m., style of boat—open or cabin—and number of lights before deciding which Model is best suited to your requirements.

Note: APELCO STARTING UNITS suitable for certain motors can be supplied.

If you are interested in a STARTING SYSTEM let us know the bore and stroke, h.p., r.p.m. and number of cylinders.

THE APPLE ELECTRIC CO.
Factory, Newark, N. J.
U. S. A.

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VALLEY BOATS



21 Foot Valley Runabout



22 Foot Fauber Hydro Runabout

These are two selections from our complete line of "VALLEY" Boats. The one is our 21 foot mahogany runabout which makes a speed of from two to 21 miles per hour with a 20 H.P. motor. It is especially equipped for comfort and ease of handling. Capacity, six persons.

The boat at the right is a special 22 foot, 5-passenger Fauber Hydroplane with a speed of over 35 miles per hour. It is very staunch and seaworthy and makes an ideal speed runabout for use in the warm summer months.

We can guarantee satisfaction because "VALLEY" Boats are designed right and built from selected materials and are completely tested out before shipment.

Let us book your order now for June or July delivery and thus avoid a rush job and possible disappointment on delivery. Tell us your requirements and let us submit to you prices and description.

VALLEY BOAT COMPANY

River St., Saginaw, Michigan, U. S. A.

MORTON

16 H.P. 4 Cyl. 4 Cycle

\$150



\$150

The Powerful Overhead-Valve Motor

If you know good motor engineering when you see it, you will be surprised at the thorough quality we have been able to build into the 1916 Morton Motor at \$150. Not only in the design, but also the materials and workmanship, you will find that only the best of everything has been used. Our long experience in producing vital motor parts for high-grade automobile manufacturers is a guaranty of our ability to produce as good a motor as you want to own.

Overhead Valves	One-Piece Camshaft
Block Cylinder Casting	Bore 3 1/2", stroke 4"
Intake Passage in Cylinder Block	Four-Cylinder, Four-Cycle

If you have a fast launch or runabout, hydroplane, or cruiser, write today for full information on the 1916 Morton Motor.

MORTON MOTOR COMPANY, 46 East Lafayette Ave. DETROIT, MICH.

Outboard Motor Owners

You saved a lot when you quit rowing but still there are many things about a rowboat that aren't all pleasure—the vibration of the motor; the sitting still lest you tip over; the uncomfortable seats; the lack of room; the waves splashing in when the water is rough.

You can get a boat that will go faster; seat seven comfortably, 5 on cushions; resist reasonably heavy seas; give you perfect safety no matter if three men sit on side combing; room to sleep under forward deck; that you can pull out of the water alone and that looks, acts, and rides like a launch.

Write for Circular C-1-B

DEERING BOAT MFG. COMPANY
MADISON, WIS.



Fitting Out Your Boat?

Remember—

There is more power in
**THAT GOOD GULF GASOLINE
AND SUPREME AUTO OIL**

Make these sterling products
a part of your equipment.

Our dealers display the sign
of the Orange Disc.

GULF REFINING COMPANY

The Largest Independent Refining Company
in the World

General sales offices: Pittsburgh, Pa.



"Chelsea"
AUTOMATIC
Striking Ship's Bell Clock



(Patented)
Equipped with the
Electric Attachment

There's a place in every motor boat, yacht and cruiser for a thoroughly reliable clock—and we furnish the clocks. Among the many types of ship's clocks we make is the "Chelsea" Automatic—it is a necessity on every large boat where accurate chronocalling of time, safety and reliability are desired.

The "Chelsea" Automatic is so designed that it will strike the big bell forward no matter where the clock may be placed. By a special push button the bell may be rung continuously as in foggy weather. Striking of the bell can be omitted if desired.

There are many features of this clock that are well explained in our catalog, which will be sent to any yachtsman or motor boat owner on request. Write for it today.

Also very many models of Ship's Bell Clocks and non-striking clocks, suitable for use on any size of boat.
Our Auto Clocks, BEST in the WORLD.

CHELSEA CLOCK COMPANY

16 STATE STREET

BOSTON, MASS.

Makers of High Grade Clocks for Residences, Yachts, Clubs, etc.

Real Economy For Every Engine

A Detroit Mechanical Force Feed Oiler means real economy because it is adjusted by the operator to feed exactly the amount of oil required—no more—no less.

This means a minimum of oil used for perfect results; but the *real economy*—the *big saving* is evidenced in the freedom from repair bills—the greater service and longer life of the machine.

Detroit Mechanical Force Feed Oilers

are the best possible insurance against burned out bearings, scored pistons and cylinders, annoying delays and shut-downs due to faulty lubrication.



They are made in styles and sizes for every kind of gas—gasoline or oil engine, marine stationary or automobile. Equipped with pulley ratchet, gear or sprocket drive for easy installation on any engine.

Catalog P-64 giving full information gladly sent on request.

DETROIT LUBRICATOR COMPANY

DETROIT, U. S. A.

General Distributors: Continental Oil Co., New York, N. Y.

Makers of the Stewart Carburetor

If You Want a Friend That Will Stick Forever, Try

JEFFERY'S MARINE GLUE

In some places economy is alright, but when you come to Marine Glue the difference in cost between the ordinary and the best is so little that you can't afford to take the risk of having to do the job over again for the sake of saving a little on the material.

It pays to use Jeffery's in the first place, every time. Jeffery's is universally conceded to be the best and most reliable marine glue. Jeffery's Glues are specified by the best designers and used by the best builders. A little investigation will show you why.

No. 1—Extra Quality for Deck and Hull Seams of Yachts and Motor Boats. Black, white, yellow or mahogany color. Give black the preference; it is more elastic and satisfactory in every way.

No. 7—Soft Quality for Waterproofing Canvas, for Covering Decks, Tops of Cabins, Canvas Boats, Canoes and Flying Boats. Black, white or yellow. With a coat of paint once a year it will last as long as the boat.

Waterproof Liquid Glue is used for the same purposes as No. 7, Soft Quality. Ready for use and requires no heating; simply open the can and paint it on. Especially recommended for waterproofing canvas covering of flying boats, and for wing surfaces. Will also attach canvas, cork, felt, rubber, leather, and linoleum to iron, steel, or wood.

Special Marine Canoe Glue. Best Filler for Canvas. Black, White and Yellow. Every canoeist should carry one of our 25c emergency cans. Sent by mail on receipt of 30 cents in stamps.

FOR SHIP'S DECK USE No. 2 First Quality Ship Glue, No. 3 Special Navy Glue. Put up in 1, 2, 3 and 5 lb. cans; also 14, 28, 56, 112 lb. boxes.

Sold by all Boat and Canoe Supply Houses, Hardware and Sporting Goods Dealers.

Write today for booklet "What to Use and How to Use It." It contains a fund of valuable information that every practical boat owner and builder should know.

L. W. FERDINAND & COMPANY, 152 Kneeland Street, Boston, Mass., U. S. A.

WANTED AMPHION AGENTS
 SAME PRICE AS A SINGLE TWIN CYLINDER ROWBOAT MOTOR
 A. J. MACHEK & COMPANY 305-24th Street, Milwaukee, Wis.

Get a

Trinity Bell

It's the kind of signal you'll be proud to own. A pleasing, courteous request for the right of way. A sharp, insistent command if you choose to prolong the sound. And through it all the melodious silvery bell tone penetrates the discordant noise of every other signal.

If you want your boat to be different from the rest of your club's fleet, get a Trinity Bell. It answers all requirements of the law. Warns both the eye and ear. Absolutely guaranteed. Not an infringement of any other device. Patent applied for Nov. 5, 1914.

Made in three sizes and models:

No. 1—Model A Size $3\frac{1}{2}$ x $4\frac{1}{2}$	\$4.50
Model B Size 5 x 5	6.50
Model C Size 6 x 6	8.50
No. 2—Model A Size $3\frac{1}{2}$ x $4\frac{1}{2}$	4.00
Model B Size 5 x 5	6.00
Model C Size 6 x 6	7.00
No. 3—Model A Size $3\frac{1}{2}$ x $4\frac{1}{2}$	3.00
Model B Size 5 x 5	5.00
Model C Size 6 x 6	6.00

Dealers and Jobbers: Get our discounts and proposition at once. Trinity Bell is a whirlwind seller.

The Trinity Bell Electric Mfg. Co.
 306 West Kinzie St. Chicago, Ill.



"The Automatic"

IT has power, quality—everything, in fact, that gives complete satisfaction to the most critical owner. It means protection against trouble, delay and annoyance; ample return for the money invested.

As to its mechanical excellence: The *Automatic* is an enclosed engine. It has removable and adjustable bronze bearings. It has an oiling system that is a part of the engine itself—one that is dependable at all speeds. The valves are very large, mechanically operated and easily removed. The governor is enclosed.

The *Automatic* is the ideal yacht engine. It is built in four or six cylinder models—giving from 30 to 150 horsepower. Clean, compact—yet with every part easy to get at, it is extremely simple to operate and care for.

If you contemplate purchasing an engine, specifications of the *Automatic* will be mailed to you upon request. You want a motor that will give you efficient service. We know that the *Automatic* will meet your most exacting requirements.

The Automatic Machine Company
BRIDGEPORT, CONNECTICUT

Viper
Trade Mark Reg.,
U. S. Pat. Off.

Sea Sled.
Trade Mark Reg.,
U. S. Pat. Off.

VIPER SEA SLED

Hickman Patents.



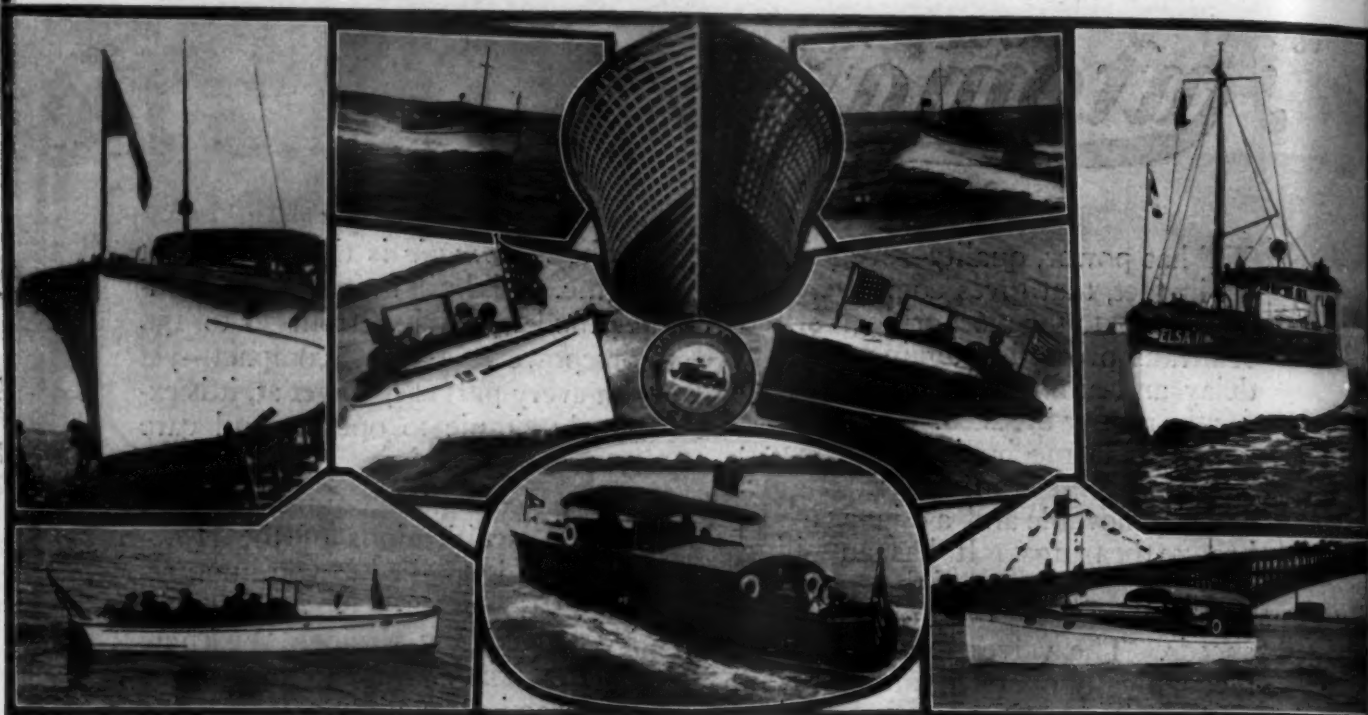
32-foot Sea Sled for U. S. Navy Dept., running at 40 miles.

This boat has planed with twenty-four passengers. Send 25c in stamps for latest bulletins.

MURRAY & TREGURTHA CO.,
340 West First St.,
South Boston, Mass.

VIPER CO., Ltd.,
PICTOU, N. S.,
Canada.

GREAT LAKES BOAT BUILDING CORPORATION



The shops and yards of this company, the largest and best equipped of their kind in the United States, are devoted exclusively to the construction of stock model and special runabouts

and cruisers of the highest grade. Inquiries should state the approximate size and type required, the number of persons to be accommodated and the speed and delivery desired.

GREAT LAKES BOAT BUILDING CORPORATION

Saint Louis Yacht and Boat Company ./. Milwaukee Yacht and Boat Company

MILWAUKEE,

WISCONSIN, U. S. A.

FERRO MARINE ENGINES

"Brand New"

1916 APRIL 1916

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

The up-to-date boat demands the up-to-date engine. For the light fast craft, that's the New Ferro Four-Cycle, just out this season.

Clean and compact, silent, swift and sure. Capable of easily making 22 miles an hour. With 2 3/4-inch bore and 4-inch stroke, it develops 10 H.P. at 1000 R.P.M. and 1 H.P. more for each additional 100 R.P.M. up to 1400.

Has few exposed working parts, yet all are quickly accessible.

Thirteen Other Ferro Models

Two of these are another four-cylinder, four-cycle, and a six-cylinder, four-cycle for heavier duty. Then there's a complete line of two-cycle engines from 3 to 25 H.P., both gasoline and kerosene burners.

For rowboats and canoes, the Ferro Detachable Outboard Motor. It ends the toil of rowing.

The Ferro Machine & Foundry Company
410 HUBBARD AVENUE CLEVELAND, O.

Return this Coupon NOW

Send me full information about: (Check in square.)

☐ Four-Cycle—Medium Duty ☐ 2-Cycle, 3 H.P. to 12 H.P. ☐ Kerosene Engines

☐ Four-Cycle—Light Duty ☐ 2-Cycle, 15 to 25 H.P. ☐ Rowboat Motor

☐ Helpful Information Blank

Name

Street

City State

LET EXPERTS HELP YOU DECIDE WHAT ENGINE'S BEST FOR YOUR BOAT

The selection of just the right model for your particular needs should be determined by experienced persons. The Ferro Service Department will gladly provide this expert assistance free.

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The finest boats built have

RELIANCE ROCHESTER

STEERING GEARS

The Most Suitable Equipment for Your Boat

If you are looking for a practical marine steering gear, and are willing to be guided by the judgment of the most discriminating boat owners, builders and architects, you will find there is ample reason for installing only a Reliance-Rochester in your boat.

Reliance Rochester Steering Gears are regularly used and specified by the foremost naval architects and builders in the country.

AMONG THE WELL-KNOWN BOATS USING THESE STEERING GEARS ARE:

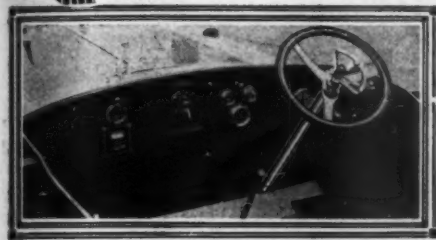
"TECH JR."	"Vitesse"	"Romany"	"Raccoon"	"Eleanor"	"Neutral"
"MISS DETROIT"	"Prunes"	"Kiota III"	"E. L. S."	"Ginger"	"Isabelle"
"WATCH YOUR STEP"	"Majona"	"Mystery II"	"R. I. L."	"Vlie"	"Ethel Dale"
"Peter Pan Seven"	"Curlew"	"Betty"	5 Torpedo Retrievers for U. S. N.	"Ruita"	"Question"
"Roslyn Jr."	"Narona"	"Intruder"	"Margaret"	"Napu"	"Nankeypoo Jr."

We believe the above names are convincing testimony to the all around superiority of Reliance-Rochester Steering Gears. Twenty-five different styles and combinations for steering, motor control and reverse control, for various methods of installation. For launches, runabouts, hydroplanes and cruisers.

Write today for catalog showing illustrations of famous boats. You will find it interesting.

W. S. HALL CO.

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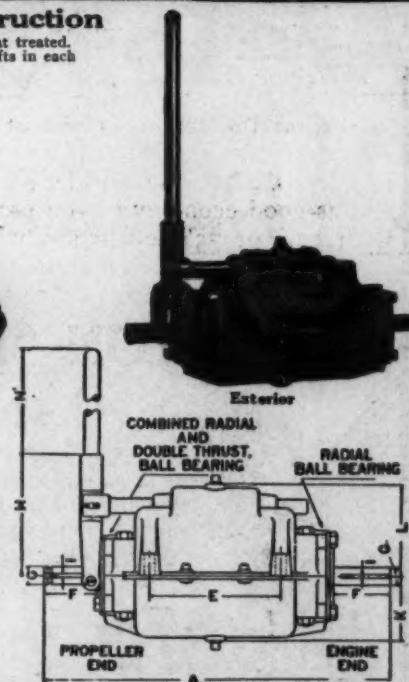
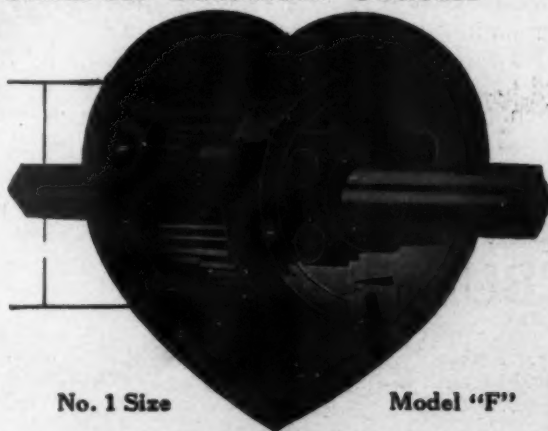
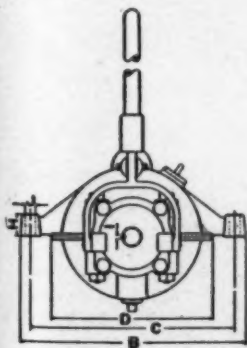
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Embodies the A. B. C. of High Grade Reverse Gear Construction

A for ALLOY STEEL: 3 1/4% Nickel Steel, used in all GEARS and SHAFTING properly hardened and heat treated.
B for BALL BEARINGS: DOUBLE ROW BALL BEARINGS of an approved type on the main drive shafts in each end of the case, the propeller end being a DOUBLE THRUST BEARING.
C for CLUTCHES:

The Johnson Friction Clutch

in a DOUBLE TYPE is THE HEART of THE NEW JOHNSON ALLOY STEEL REVERSE GEAR. Investigate these features, new to REVERSE GEAR construction, which we have successfully applied and used, and then use your own judgment in selecting the Gear for your own boat for the coming season.

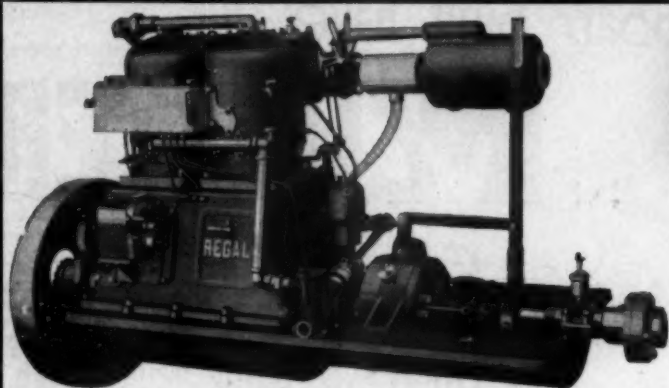


Gear No.	H.P. Per 100 R.P.M. Max.	H.P. for High Speed Motors Max.	H.P. for Medium Speed Motors Max.	WEIGHT		List Price for Cast Iron Case	List Price for Aluminum Case	DIMENSIONS IN INCHES											
				Cast Iron Case	Aluminum Case			A	B	C	D	E	F	G	H	I	J	K	L
0	3/4	5	3	23	19	\$24.00	\$36.00	12 3/4	7 1/4	7	5 1/2	4 1/2	2	3 1/2	1 1/4	3/4	3 1/2	3 1/2	4 1/2
1	1	10	6	40	32	36.00	48.00	15 1/4	9 1/4	8 1/4	6 1/2	4 1/2	2 1/2	1 1/4	1 1/4	3/4	3 1/2	3 1/2	4 1/2
*1 "A"	1 1/4	20	10	70	55	42.00	54.00	19 1/4	10 1/4	9 1/4	7 1/2	5 1/2	3 1/2	1 1/4	1 1/4	3/4	3 1/2	3 1/2	4 1/2
2	2	30	15	93	75	48.00	60.00	21 1/4	11 1/4	9 1/4	8 1/2	6 1/2	4 1/2	1 1/4	1 1/4	3/4	3 1/2	3 1/2	4 1/2
*2	3	40	20	127	100	72.00	90.00	27 1/4	13 1/4	14 1/4	11 1/2	8 1/2	5 1/2	1 1/4	1 1/4	3/4	3 1/2	3 1/2	4 1/2

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The Engine of Greater Perfection

Whether you are interested in an engine for work or pleasure it will pay you to investigate the new 1916 line of REGALS.

Regal engines have been manufactured for 15 years and are built for all styles and types of boats. They are mechanically correct in design and workmanship—the very best of material is used, bearings are large and ample, all of which insures the engine long life and very little, if any, cost of upkeep.

Above is a cut of the 14-H.P. medium speed engine which is particularly designed for cruising, working or finishing boats. Weight is 950 pounds.

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Any Regal Engine will be constructed to burn kerosene or coal oil at no additional charge.



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4 H.P. 4	× 4 1/4	One-cylinder	113
8 H.P. 4	× 4 1/4	Two-cylinder	263
16 H.P. 4	× 4 1/4	Four-cylinder	480
32 H.P. 4 1/2	× 5 1/4	Four-cylinder	678

MEDIUM SPEED

5 H.P. 4 1/2	× 5 1/4	One-cylinder	150
10 H.P. 4 1/2	× 5 1/4	Two-cylinder	338
20 H.P. 4 1/2	× 5 1/4	Four-cylinder	525
7 H.P. 5 1/4	× 6 1/4	One-cylinder	255
14 H.P. 5 1/4	× 6 1/4	Two-cylinder	413
30 H.P. 5 1/4	× 6 1/4	Four-cylinder	750

SLOW SPEED

9 H.P. 6 1/4	× 7	One-cylinder	330
18 H.P. 6 1/4	× 7	Two-cylinder	578
36 H.P. 6 1/4	× 7	Four-cylinder	1125
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Without propeller equipment.

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Now that the season is almost over, stop a minute and consider whether your engine has run as smoothly this year as you would like to have it. Are you satisfied? Do you get as much power and speed, and as good economy as you used to get? Can you afford to get along with 50% or 75% efficiency, when for a few dollars more you can get 100% efficiency, at least in so far as carburetion is concerned? Perhaps all you need is a

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Complete Wireless Telegraph Equipment

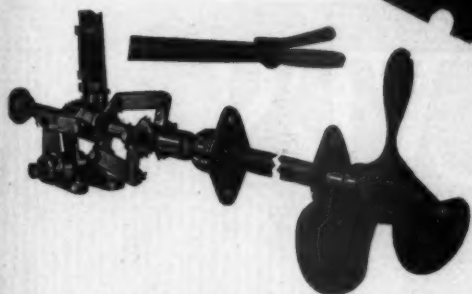
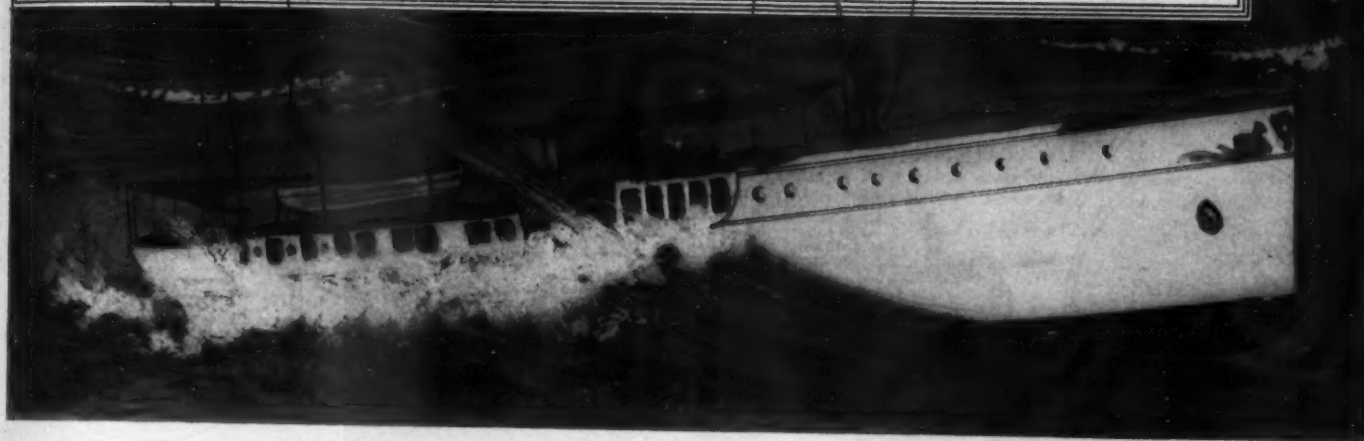
for every type of small motor pleasure boat

We have perfected a powerful Wireless Equipment for use on small pleasure crafts. With it messages can be transmitted within a 1,000-mile range, receiving radius 5,000 miles. Anyone can learn to transmit and receive messages without previous experience. Equipment is designed for use with dynamo generator, also storage battery, which in the event of engine disablement, can be used with the battery. Every boat that cruises is incomplete without this equipment.

We will be very glad to forward complete information. State size of your boat and engine power and we will give you all facts.

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GORDON

REVERSIBLE

PROPELLERS

The Gordon Propeller is giving reverse gears and other reversing devices a "run for their money" such as has seldom been witnessed in the marine field. We believe the Gordon is the most successful ever devised, not only from a mechanical standpoint, but also a straight business proposition.

The fact that other keen boat owners are buying Gordon Reversible Propellers, after searching investigation, is one convincing reason why you should have one in your boat. It was awarded the Gold Medal at the Panama-Pacific Exposition in San Francisco, and the Grand Prize at the Alaska-Yukon-Pacific Exposition at Seattle in 1909.

The Gordon is light, compact, reliable and trouble proof. Made of the strongest materials, carefully machined and finished. The design has been carefully worked out to avoid all troubles. You can set the lever to feather, or to secure any pitch you want, insuring maximum speed and efficiency.

For Launches, Cruisers, Tugs, Workboats, Fishermen and Auxiliaries

The new propeller control illustrated below makes it easier to reverse on big heavy boats and also permits adjusting the pitch within the smallest fraction of an inch.

Look into the Reversible Propeller.

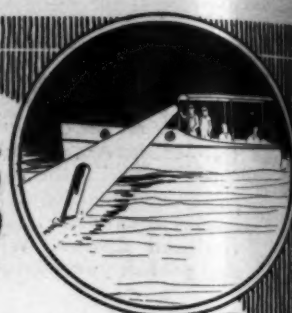
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GORDON
PROPELLER CO.
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Install a real electric lighting system on your boat—not a toy outfit to run a few weak lights, but a complete central station that will give as much light and as many lamps as you want. It doesn't matter how large or small your boat, we can meet your requirements with one of the

Henricks Eureka Motor Boat Lighting Outfits

We have placed the luxury and convenience of electric lighting within the reach of every power boat owner. Our Eureka Motor Boat Lighting Outfits give you all the advantages of electric lights at the lowest possible cost. They combine the lighting and motor ignition into one simple, trouble-proof system.

We are the manufacturers of the well-known Comet Magneto, and there are thousands of them used for ignition and lights on power boats. Sixteen years' experience in magneto building has enabled us to produce the Eureka Lighting Outfit.

Magnetos for Ignition and Lights Direct from \$10.00 Up.

Lighting Outfits, consisting of Generator and Storage Battery, \$30.00 and Up.

Switchboards, \$12.00 and Up.

Write us today for catalog which gives details of lighting outfits for all sizes of boats up to 60 ft.

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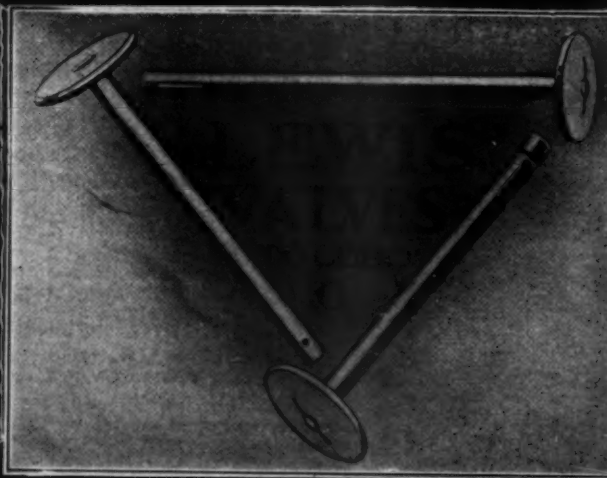


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Used in many of the
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Automobile
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Engines. There's a reason. Lewis Valves add to the quality of the motors that use them.



Our excellently equipped plant and perfect facilities for producing high grade valves of all sizes and types is the best reason in the world why you should let us make your valves.

Samples and quotations to manufacturers on request.

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You Can Hear a Pin Drop

ON ANY BOAT EQUIPPED WITH

THE STILL ARCTIC SILENCER

*The Silencer
You Will Install
Eventually*



*Why Experiment?
Start Right
Save Expense*

Complies with laws
Increases boat speed
Makes any engine
absolutely silent
Stops vibration
Prevents fires
No back pressure
No clogging

Water cannot flow back
to engine cylinder
Keeps cool
Saves space
Light weight
Easy to install
Saves Piping

Destroys the Exhaust Gases.

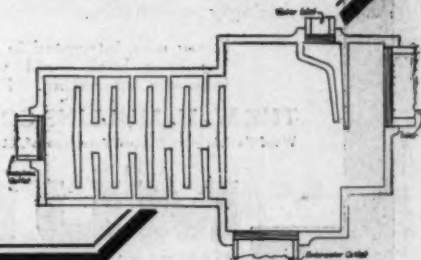
The Still Arctic Silencer utilizes the entire discharge engine cooling water, spread out in a thin veil across the opening between expansion chamber and lower end of inlet chamber. All exhaust gas is compelled to pass through this water veil, destroying the heat, and reducing its volume and pressure. Then the gas is expanded in a chamber of ample size, checking its mad rush at Silencer end, discharging the bulk of exhaust and cooling water through the underwater connection, passing the residue gases that would otherwise cause back pressure through the silencing baffle pile, gradually and silently discharging them to the atmosphere.

No.	Net Price	Maximum engine bore and strokes recommended.		Dimensions
		2 cycle engine	4 cycle engine	
553	\$9.00	3" x 3 1/2"	3 1/4" x 4 1/2"	5 1/4" x 10 1/2"
554	9.50	4" x 4 1/2"	4 1/4" x 5"	5 1/4" x 12 1/2"
704	10.00	4 1/2" x 5"	5" x 5"	7" x 12 1/2"
708	11.00	5 1/2" x 6"	6" x 6 1/2"	7" x 16 1/2"
712	12.00	6 1/2" x 6 1/2"	7 1/2" x 9"	7" x 20 1/2"

Other sizes upon application. Number of cylinders makes no difference. In ordering state pipe size engine exhaust and cooling water discharge outlets.

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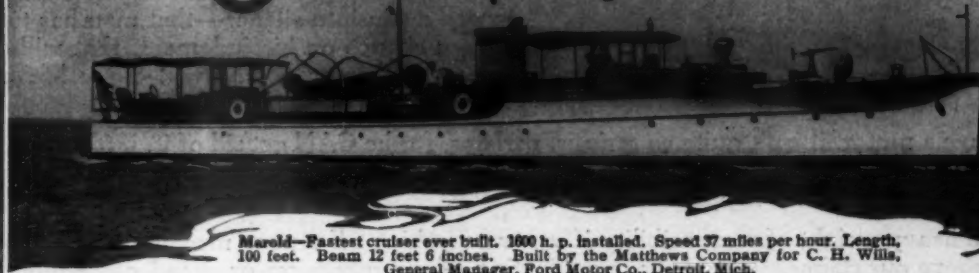
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4 Years of experience and a most modern plant places us

in a position to readily interpret your particular requirements and to combine beauty, comfort, seaworthiness, utility of space and economy of operation in a power yacht that will prove a source of supreme pleasure to you throughout a long term of years.

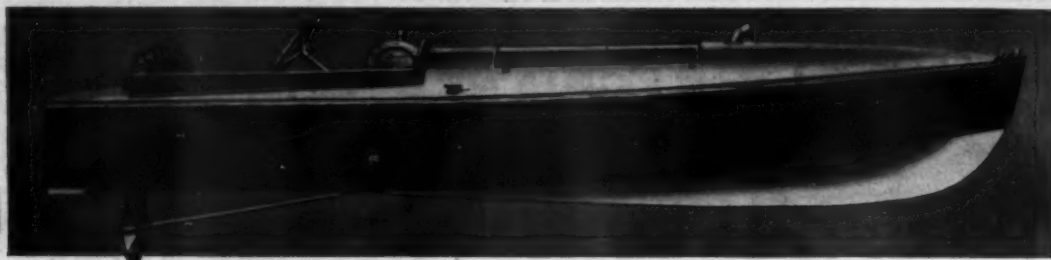
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Mullins' 16-ft. 25 h. p.
Hydroplane—holder of
the world's record

Besides being beautiful in line, graceful in action and built to last a lifetime, Mullins steel boats are consistent as to speed. You can buy a 16-foot Mullins Hydroplane, exactly as shown in the picture, with a guarantee of twenty-eight miles an hour or no sale.

Every Mullins boat, from the 16-foot launch to the 26-foot automobile of the waterways, is designed by master naval architects and built in the largest boat factory in the world. That's why the name "Mullins" stands for beauty, power, endurance and consistency.

Mullins hulls are of pressed steel, having greater resistant qualities than one-inch oak planking, yet they are light and answer the wheel like an automobile. No seams to open or require calking—can't sink. Power? Your choice of the best marine motors built in both 2 and 4-cycle types. Prices? Surprisingly reasonable.

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THE W. H. MULLINS CO., 714 Franklin St., Salem Ohio
World's Largest Manufacturers of Steel and Wooden Pleasure Boats and Canoes

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Mullins Hydro Scat owned by
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Unit Power Plant Model "F" THOROBRED
28-36 H.P., 4 1/16 x 5"
Furnished with or without Unit Power Plant

Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE.

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—when the janitor turns out the lights and the congregation's gone, and the wedding bells have lapsed again into silence—that man has taken a step, a chance on his judgment, that will determine whether or not he will enjoy life in the future.

When a man buys a motor, it isn't quite so serious, perhaps, for he CAN get rid of it, if it's unsatisfactory, yet for most of us who are not rolling in wealth, buying a motor is really quite an event, and upon our judgment depends several seasons' happiness or grief.

We would feel a heavy weight of responsibility if we were poking off a poor machine on people who trust us enough to believe our claims. But we have no feeling of apprehension or dread of results. We know when a man buys a "Thorobred" we're bringing that man contentment and satisfaction—creating a friend and booster whose success and enthusiasm will bring more recruits to motor boating and more buyers for our motors.

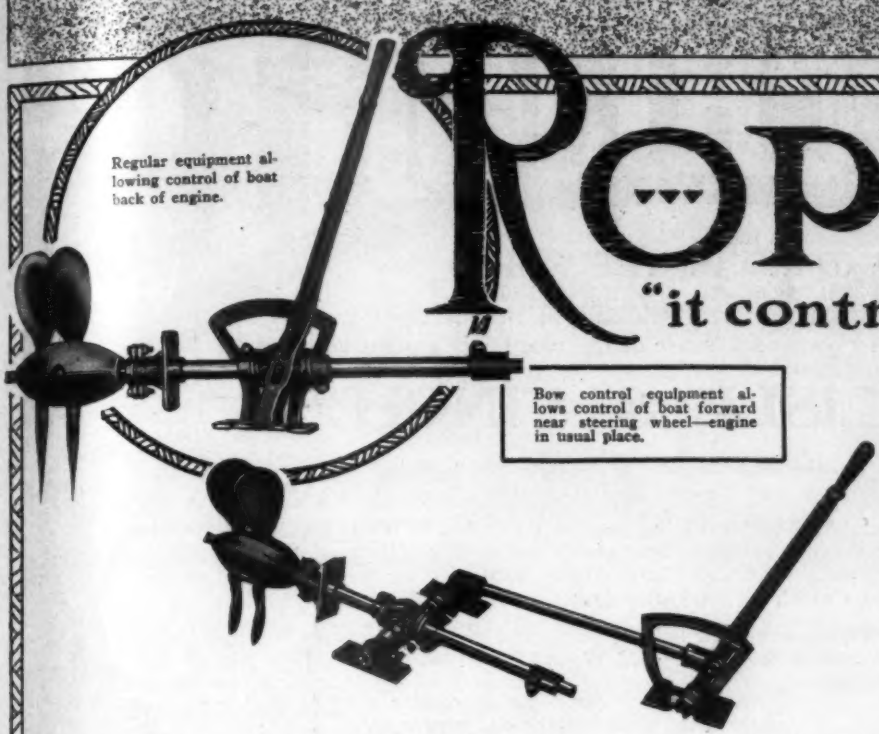
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RED WING MOTOR COMPANY, Dept. B., RED WING, MINN., U. S. A.



Regular equipment allowing control of boat back of engine.

ROPER

"it controls the boat"

Bow control equipment allows control of boat forward near steering wheel—engine in usual place.

Yes, it's a propeller, but a *different kind of a propeller*—one which completely upset an old principle and established a new one by doing all the work of controlling the boat except steering.

With the Roper Propeller the engine is connected direct to the propeller shaft, doing away with friction clutches and other troublesome contrivances. The Roper gives any degree of speed, starting from absolute rest to full speed ahead or astern, on the instant, by operating *one control lever*. It eliminates the necessity of engine adjustments, giving any speeds desired.

Make your power plant a *unit* by putting in a Roper Propeller.

Our illustrated booklet is of interest to motor boat owners who desire pleasure, safety and economy in the operation of their boats. Send for a copy now—to do so is the first step towards a *new era in motor boating*.

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Auxiliaries and yachts of all types in wood, steel, bronze or composite construction. Steam power plants.

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We make searchlights in sizes from 7 inches to 60 inches diameter. They are suitable for the smallest launches, runabouts, cruisers and yachts, up to the largest passenger boats and battleships. Invaluable for both safety and pleasure on all boats which are used after dark.

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Get the Newest L-A Engine Book



THE question of selecting the right engine for that boat of yours is an important one. It will pay you well to get all the information possible before making your final decision, as the satisfaction you get from your outfit will depend largely upon the care you take in choosing your motor. You will find the new L-A engine book brim full of valuable hints and interesting engine information. It describes our complete line of inboard and outboard motors for canoes, rowboats, pleasure boats and work boats.

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L-A 2-cycle motors in both single and double cylinder types and made in sizes from $2\frac{1}{2}$ to 12 H.P., and are noted for their extreme simplicity, big power, and qualities of absolute dependability.

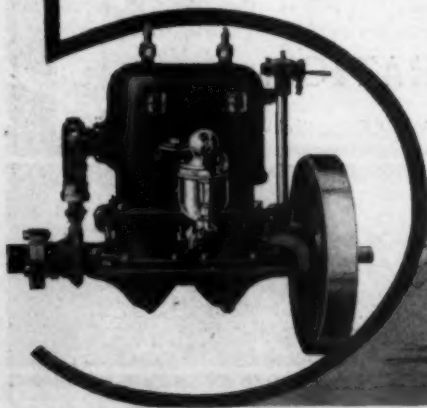
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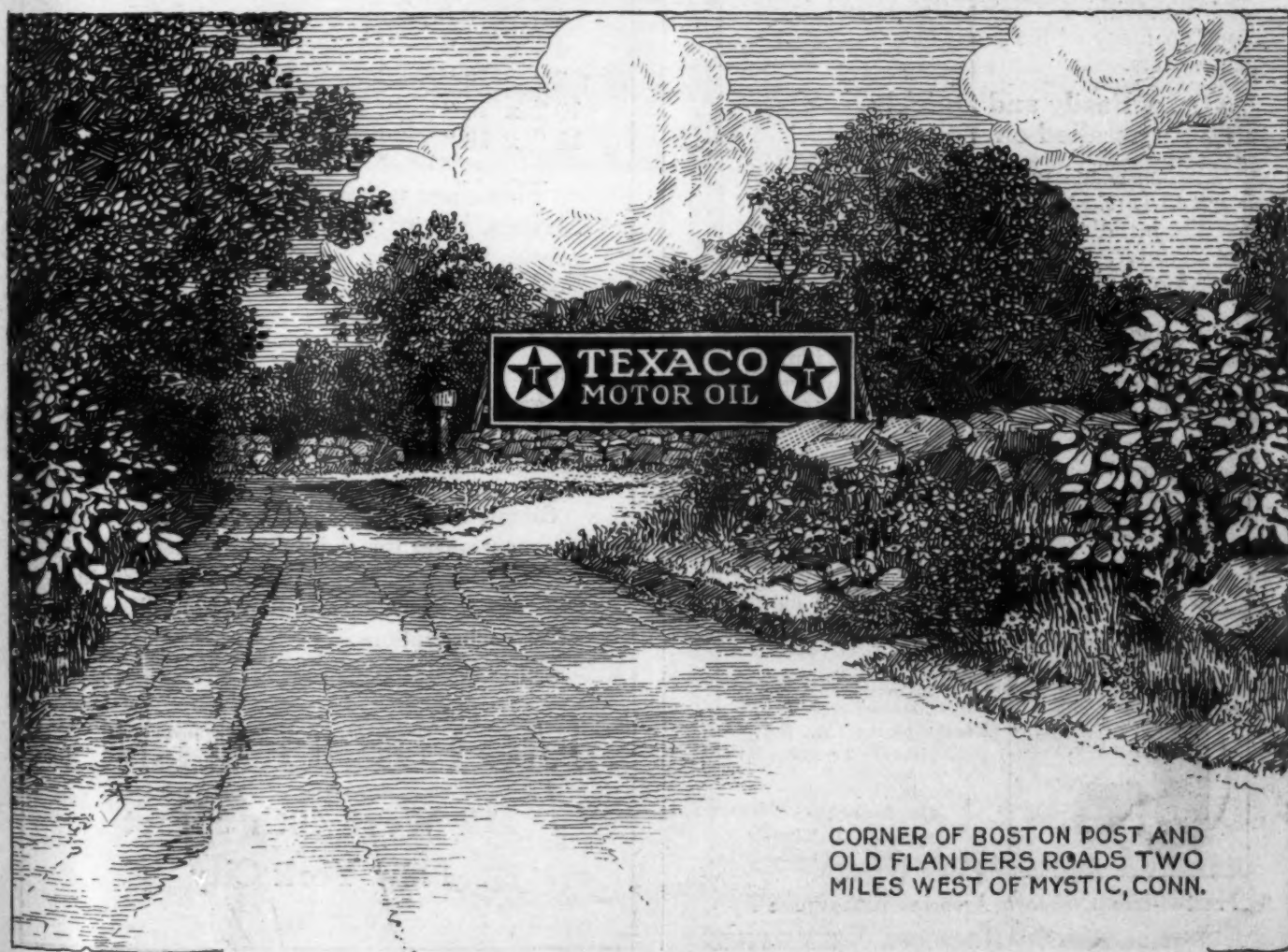
THE more you know about marine motors, the more enthusiastic you will be about Wisconsin. From the smallest four-cylinder, $3\frac{1}{4} \times 5$ to the eight-cylinder, $5\frac{3}{4} \times 7$, every Wisconsin Motor does its work smoothly and quietly, without vibration—runs consistently, without attention, under all conditions.

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No boat is completely equipped without adequate lighting.

That's what every boat owner needs in a lighting system—and that's what you get when you install Prest-O-Lite.

Years of satisfactory service have proved it to be the most dependable, economical and efficient system of boat lighting.

Prest-O-Lite, in suitable sizes, gives an abundant supply of penetrating light, for searchlight and signal light purposes on every size boat. It is equally convenient and satisfying for cabin lights, and is so used on many of the finest boats in American waters.

Easily and Quickly Installed on Your Boat

Anyone can understand and operate Prest-O-Lite. We have a very simple plan for the installation of acetylene boat lighting fixtures, together with various appliances for engine priming, cooking, automatic lighting for searchlight, cabin and signal lights, regarding which we shall be glad to furnish full details on request. Oil lamps can be quickly and inexpensively converted into combination oil-and-gas lights, if desired.

Makes Motor- Starting Quick and Easy

Prime your engine with acetylene, from the same tank that furnishes you lights, by means of the Prest-O-Primer. This is one of the easiest, quickest and most economical ways to start a cold engine of any size. Send for folder.

Literature of interest to every boat owner, buyer or builder, sent on request.

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Very Convenient for Camp Cooking and Lighting—Costs Little

The Prest-O-Lite Stem-and-Burn Attachment and the Auto-Hot Plate when used with Prest-O-Lite, provide an ideal lighting and cooking outfit for shore parties. Stem-and-Burner, 55 cents. Auto-Hot Plate, \$4.50.



Prest-O-Lite Exchange Agencies Everywhere

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It will shortly be necessary to procure your club flag for the coming season.

Instead of spending money that may be useful for another purpose, why not take advantage of the following offer:

Give the secretary of your club a dollar for a year's subscription for MoToR BoatinG. He will send a certain number to us and we shall give your club, free of charge, a flag guaranteed to be U. S. Govt. standard all-wool bunting—according to the following schedule. Your flag—

4 ft. x 6 ft.,	worth \$6, for 15 Subscriptions
6 " x 9 "	" 9, " 20 "
8 " x 12 "	" 11, " 25 "
10 " x 15 "	" 13, " 30 "
12 " x 18 "	" 16, " 40 "

This does not refer to the Stars and Stripes, but to your club's own signal, made according to your club's own design.

You thus kill two birds with one stone. You get the finest magazine of its kind for a whole year and, with your fellow-members, you save your club real money.

Simply hand your dollar to your Secretary, or whomsoever the club may designate to collect it, tell him what it's for, and he will do the rest. A two years' subscription (\$2) will count as two subscriptions.

MoToR BOATING
119 West 40th Street
New York City



1. Operate as a pump or by compressed air generated by a few quick strokes.
2. Special device shows at sight whether machine has been tampered with.
3. Carries a steady stream 30 feet.
4. A non-conducting liquid that will extinguish electrical, oil and gasoline fires. Harmless to skin or fabric.
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Easy Fire Fighting in Cramped Quarters

Fire comes without warning—often in the most unforeseen places. And everywhere, even in the roomiest boat, there are cramped quarters—under the deck—in the cock-pit—around the engine, which make a pump-while-you-use extinguisher practically worthless. But with the

J-M FIRE EXTINGUISHER

The Last Word in "Safety First"

you can tackle any hard-to-get-at fire. Just a few quick strokes of the handle, then by the air pressure thus generated, direct a steady, non-pulsating stream right into the blaze.

The liquid is non-conducting, smothers the incipient fire of gasoline, oil or electrical origin and is harmless to skin or fabric.

Sealed at the nozzle, this extinguisher shows at sight that it is ready for action.

The J-M FIRE EXTINGUISHER is small, handsomely finished and should be placed at some convenient point on your boat available for instant use.

Labeled by the Underwriters' Laboratories and included in the list of approved fire appliances issued by the National Board of Fire Underwriters.

The J-M Extinguisher Fluid is supplied in cans that list at \$1.00. Each can contains sufficient liquid to fully charge one extinguisher. Liquid is non-deteriorating. This is the only liquid recommended and guaranteed for use in the J-M Fire Extinguisher. Discounts to trade especially attractive.

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THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED.

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SPEEDY, POWERFUL No Vibration

Absolutely dependable. Easy to start. Easy to manage. Without question the finest rowboat motor made.



Built-in Magneto or Battery Ignition

The Great 2-CYLINDER KOBAN ROWBOAT MOTOR

The Original 2-Cylinder Rowboat Motor

Has 3 Full Horsepower

NEW 1916 features include tilting device, multiple speeds, tiller at right-hand side, waterproof timer, fool-proof carburetor, thrust adjusting gear case, Aeroplane Type magneto and many others.

Doesn't Shake the Boat

Vibration is entirely removed by opposed cylinders that fire at the same time. Reverses by simply pressing the button. Runs perfectly at trolling speed or can skin nine out of ten launches at high speed.

Has the speed—and then some

It's a demon for speed. Indeed, so fast that it must pay the penalty of a handicap in most races.

"It can pass any motor on our lake" is the message from Hibbing, Minn.

"It blows right by all of them," is the report from Glens Falls, N. Y.

This is typical of hundreds of other letters on the point of speed, from all parts of the world.

It is a real motor—built on sound engineering lines

Interesting facts fully explained in illustrated 32-page catalog. "For Goodness sake" don't think of making a selection until you have sent for catalog. It's free. Agents and dealers wanted.

Koban Manufacturing Company

246 South Water Street

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Our line also includes a 2-cylinder, 3 H.P. vibrationless in-board marine engine for small launches, canoes, etc.



FIRE EXTINGUISHER

Approved by
U. S. Steamboat
Inspection Service

Ample
Capacity

No Tilting

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Stream
35 Feet

No
Pumping

Effective on
Gasoline and
Electric Fires

Size
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Before equipping for the
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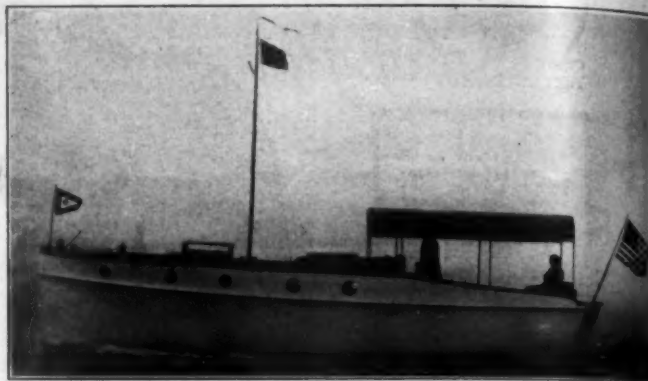
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REWARD



Raised deck cruiser, Daraf, 40 feet in length, 10 feet beam, powered with a 4-cylinder, 4-cycle heavy-duty Manhasset motor, bore 5 inches, stroke 5½ inches, No. 6254, registered in the Oyster Bay Yacht Club. Cabin divided into stateroom, galley and engine room; fuel tank located at stern; planking, yellow pine; interior finish in mahogany; exterior trim in oak.

A LIBERAL reward will be paid to the person or persons furnishing information that will lead to the recovery of the boat above described, which was stolen from her mooring in Wading River, on or about Sept. 21st, 1915. If you see a boat which you think is DARAF, wire full particulars to C. F. Chapman, Norwich, Conn.

MoToR BoatinG's Bureau for Recovering Stolen Boats

Absolutely Free to Subscribers

If your boat has been stolen, MoToR BoatinG will help you to recover it, absolutely free of charge. The above is an example of this service. It is offered to all subscribers, new or old.

To provide against the possibility of future trouble or delay, we suggest that you send us at your convenience a photograph of your boat with full particulars on the blank below. This will be filed in our office and should your boat be stolen, or be lost any time, all you have to do is to wire or write us of the facts and in the next issue we will publish an illustration with detailed description. If you instruct us to offer a reward, we will do so. Your ad will be read by thousands of motor boatmen, on every harbor, river and bay in this country. The chances are 100 to 1 that the boat will be quickly recovered and returned to you.

Fill in the blank below and return it to us, now, with a photograph. If you are not a subscriber, send us \$1 for a full year's subscription for MoToR BoatinG, and you will be entitled to register your boat in MoToR BoatinG's Bureau for Recovering Stolen Boats.

Owner	Remarks
Name of Boat	Address
Length	Type
Make of Motor	Beam
No. of Cyl.; Cycle	Horsepower
Planking Material	Bore
	Stroke

Address all communications to

Editor MoToR BoatinG
119 W. 40th St., New York

Without extra charge to you

the best manufacturers of
marine motors will now
equip your engine with the

Berling Magneto

Among those who at present will supply the
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SPEEDWAY	UNIVERSAL	WATERTOWN
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MONROE, MICH. January 25th
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Gentlemen:-

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with your magnetos.

Very truly yours,

VAN BLERCK MOTOR COMPANY

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Why the Berling is worth more—

ONE-PIECE FRAME—WATER-PROOF—OIL-PROOF—
STURDY—RELIABLE—EFFICIENT.

4
8 CYL. DUAL TWO-SPARK HIGH-TENSION MAGNETOS.

(Also all types for all types of motors)

A few far-sighted marine-motor folk can
get some interesting news by writing

ERICSSON MANUFACTURING CO.
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It's All Pleasure Now!

There's no need to dull the keen edge of
your enthusiasm in getting ready for your
next cruise. You can make quick work
of loading supplies and placing your
guests aboard-ship. You can forget the
delays and annoyances of by-gone trips if
your tender is equipped with an Evin-
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DETACHABLE ROWBOAT & CANOE MOTOR®

are not only a convenience, but an indispensable
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When the wind fails, or something goes wrong,
an Evinrude on your tender or dinghy will quickly
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The Evinrude Four-Cycle Twin appeals espe-
cially to yachtsmen and large power-boat owners.
It has more power, more speed, runs quietly and
is almost entirely vibrationless. There's more
speed, too, and other improvements in the Single-
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Both the Twin and Single-Cylinder models are
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Evinrude Motor Co.



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"Evinruding"—Is Rowboat Motoring

EVINRUDE MOTOR COMPANY,
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Kindly send me a copy of the 1916 Evinrude catalog.

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CAILLE

Aristocrat Motor

THIS is truly the marine motor par excellence. It embodies every known feature of merit found in any marine motor of its size, regardless of price. It represents the highest degree of perfection ever attained in marine motor design.

The Caille Aristocrat is a four-cycle motor. It has four cylinders cast en bloc, like an automobile motor. It develops full 14 horsepower.

Any boat powered with a Caille Aristocrat can be operated and controlled like a motor car, for all the controlling mechanism and instruments are mounted on a dash. This can be located at any desired point in the boat and the operator need not leave his seat to secure any function of the motor.

It starts electrically by simply pressing a button. Pressing another button stops it. The motor generates current for head-light, side-lights, stern-light, and, if desired, for an electric light to be mounted on the dash. All lights are instantly available by pressing a switch.

The reversing gear is built into the motor. This insures perfect alignment of shaft and ease in gear shifting.

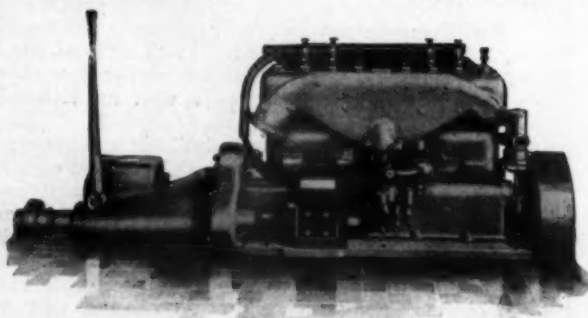
In materials and workmanship the Caille Aristocrat cannot be excelled. The equipment is of the highest grade and includes a Schebler carburetor, Bosch magneto and a starter of indisputable merit and quality.

Its beautiful gray enamel finish and nickel trimmings are sources of genuine pride to the owner and form real ornaments in any boat.

Special Catalog No. 48 Mailed on Request

When writing, please tell us the length, beam, draft, speed desired and the style of your boat. We can then write you more intelligently.

The Caille Perfection Motor Co.
1540 Caille Street Detroit, Mich.

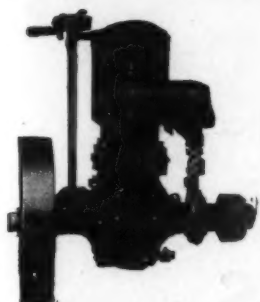


14 Horse Power
Four Cycle
Electrically
Started
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Electric Lights

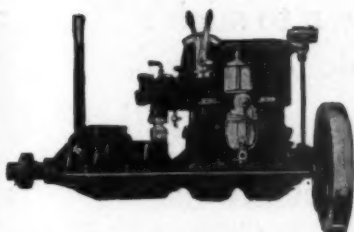


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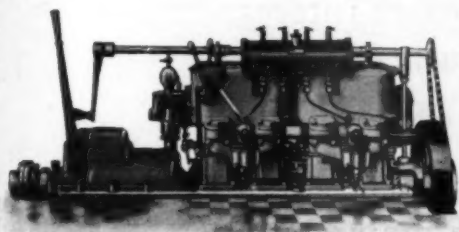
Perfection Motors



Caille 2 H.P. Single Cylinder Motor for
Boats Up to 18 Feet



Caille 8 H.P. Unit Power Plant for
Boats from 16 to 30 Ft. in Length



Caille 18 H.P. Four-Cylinder American
Gentleman Motor for Pleasure and
Speed Boats Up to 35 Feet Long
Equipped with Rear Starter

Two-Cycle Type

To those acquainted with the relative values represented in the various two-cycle marine motors on the market, the name "Caille" carries the same assurance of quality that the word "Sterling" carries on silver. For many years Caille Two-Cycle Marine Motors have been recognized as the standard. They have been looked upon as the leaders—not only in design and efficiency, but in point of long-continued service as well.

They have been adopted by practically every leading government on the globe. They are used the world over. They are recommended by many of America's leading boat designers and builders. And they are installed in boats of all classes—pleasure boats, work boats and speed boats.

The wide range of sizes (2 to 30 H.P.) and the various types of Caille motors make it well-nigh impossible that you should have a boat for which a Caille motor would not be particularly adapted if within their range of power.

Write us your needs. Tell us about your boat. Let us help you solve your power problem. Our engineers are at your service. They will advise you as to the proper motor installation in a truthful, unbiased manner.

Send for Catalog No. 10 Showing
The Caille Line

The Caille Perfection Motor Co.
1540 Caille Street Detroit, Mich.



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.
Advertising Index will be found on page 43.

The May issue of MoToR BoatinG will specialize
on the Subject of

Outboard Motors

This department of the industry has grown to such proportions that we have found it advisable to cover every detail of this branch in one issue.

May MoToR BoatinG will contain illustrations and complete descriptions of every outboard motor on the market. A comprehensive survey of the various models offered will be much more interesting for readers than for them to gather all the information from separate catalogs.

If you are interested in outboard motors, be sure to read May MoToR BoatinG. If you manufacture outboard motors or the boats used with them, advertise your product in May MoToR BoatinG.

Prospective advertisers are requested to write for full details. Forms for May close April tenth to fifteenth.

**MOTOR
BOATING**

119 West 40th Street

New York City



Owners of *Frisbie* Valve-in-Head equipped boats are not worrying about "gas" prices

—simply because they *know* that the valve-in-head principle of construction gives from 15 to 20 per cent greater efficiency, greater economy and durability.

Frisbie Marine Motors are conservators of fuel, whether single or six-cylinder models. The valves open directly into the cylinder head, without recesses or pockets. The full force of the explosion is exerted on the top of the piston. The valves are large giving the greatest quantity to the fresh charge of gas, and the cleanest exhaust after explosion.

The valves are placed in removable cages, the whole cage including valve and seat being quickly removable for inspection, grinding or replacement.

Frisbie Motors are *different* in many constructive points from other types—a difference that guarantees satisfactory performance in no matter what model or horsepower you buy.

They are built in ten models from 3 to 75 H. P., from 1 to 6 cylinders. The Frisbie catalog is complete in the description of each model and contains information about four-cycle, valve-in-head motors that every motorboat owner wants. Sent free on request.

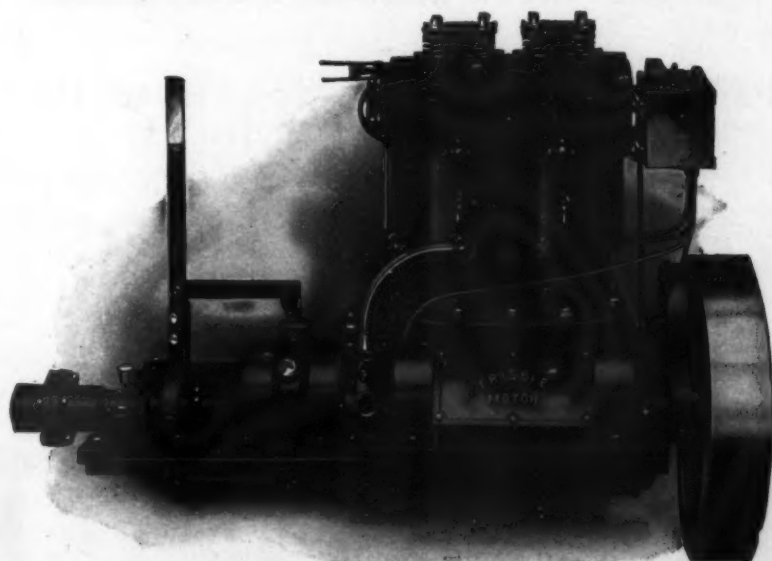


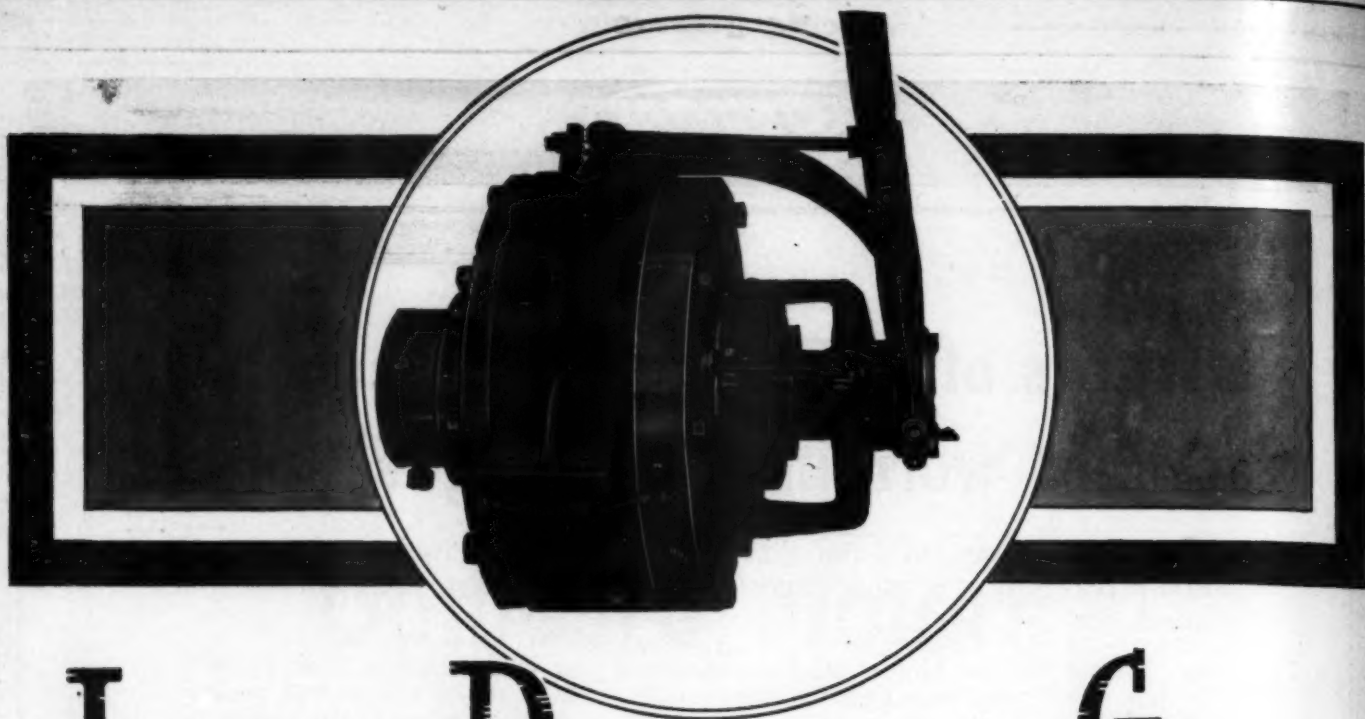
THE FRISBIE MOTOR COMPANY, Inc.

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MIDDLETOWN, CONN., U. S. A.

EXPORT DEPT., 95 WILLIAM ST., NEW YORK, N. Y.





Joe's Reverse Gear

and two famous boats equipped with it

It takes a boat of the "Penn Yan's" class to determine the efficiency of a reverse gear. Up on Lake Keuka, New York State, the "Penn Yan" serves in the capacity of passenger and freight steamer making round trips every day, and stopping at 100 to 120 landings every trip.

The "Penn Yan" is an important boat and it is *important* that her mechanism be in perfect working order every minute of the day. She is equipped with No. 172 Joe's Duplex Drive Heavy Duty Reverse Gears. Attached to Buffalo heavy duty motors.

Everybody knows that "Miss Detroit" won last year's big race. She's a speedy little boat and nothing but the best equipment is good enough for her. She, too, depends on a Joe's Reverse Gear on her Sterling high-speed motor.

Now, if Joe's Duplex Drive Heavy Duty Reverse Gear is good enough for these boats—and a good many others—it is good enough for you. It is the only heavy duty gear on the market that has same speed ahead and astern; that does not depend on locked gear teeth for the forward drive. The price will interest you.

Among the Navies which have adopted and are using Joe's Gears in quantities are the United States Navy and most of the principal Navies of Europe.

WRITE FOR PARTICULARS

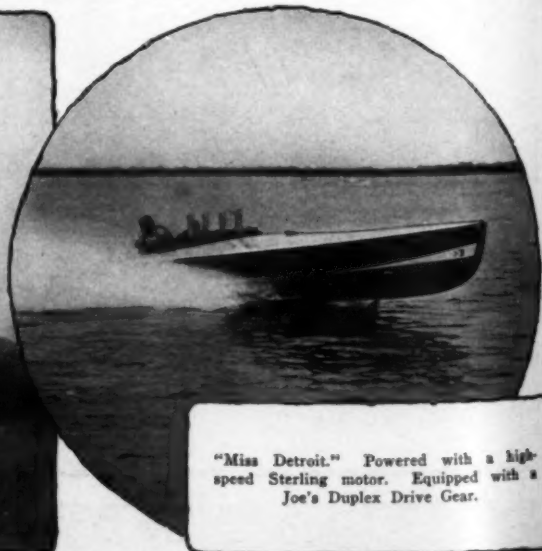
THE SNOW & PETRELLI MFG. CO., New Haven, Conn., U. S. A.

Manufacturers of Heavy Duty and High Speed Reversing Gears, One Way Clutches, Rear Starters, etc.

Agents: J. King & Co., 10 Church Row, Limehouse, London, Eng. L. H. Coolidge Co., Seattle, Wash. Gasoline Engine Equipment Co., 85 Liberty Street, New York. Wood, Vallance & Leggat, Vancouver, B. C. Shea Sales Co., Montreal. A. R. Williams Mch. Co., Toronto. W. D. Foreman, Chicago.



The "Penn Yan." She is 150 feet long and powered with two heavy duty Buffalo motors on No. 172 Joe's Duplex Drive Gears.



"Miss Detroit." Powered with a high-speed Sterling motor. Equipped with a Joe's Duplex Drive Gear.

Globe Eddystone

Marine Engines

THE "GLOBE" and "EDDYSTONE-GLOBE" engines are appreciated most by those who must show a profit for their operations, and whose experience has taught them what a Marine Engine ought to be to insure unfailing service, year in and year out, season after season. It is the engine you can buy with absolute assurance that it will do your work as you expect it to, with maximum economy of fuel and minimum up-keep. **GLOBE RELIABILITY** has been a by-word with those who must pay dividends on their investment and where delays mean loss of increase.

Pleasure is almost as exacting, for the joy of Boating is to sit back without worrying about the Power Plant after starting and by specifying "GLOBE" for the new boat, also for the old one which was laid up last year, you are insuring successful coming years.

Send for catalog. Give full information relative to size of boat for which engine is intended and any other data to help us recommend proper size engine for your purpose. Immediate delivery up to 50 H. P.

PENNSYLVANIA IRON WORKS COMPANY
EDDYSTONE, PA.



THE STANDARD CO., Torrington, Ct.

Gentlemen: I think it is my duty to write you of the success I have had with one of your model 2-0 engines. I have had several other motors in the past six years, but none that equalled this steady and reliable engine. It has given splendid satisfaction. Installed in my 14 foot boat, "Silver Heels II," it proved a winner, taking with it the honors of the South Jersey Championship, and after the season's work it is in tip top shape. As actions speak louder than words, I feel sure that the Eagle has made a great many friends in South Jersey.

Very truly yours,

A. C. GILMORE.

Overbrook, Pa., Dec. 20, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: Will drop you a few lines in regard to model 2-0 12 H.P. engine which I purchased of you 2 years ago. Will say I am very well pleased with engine; as I have not a speed model hull, I make about ten miles per hour, which is very good. Have not had any trouble with it and have just taken engine apart to clean and look it over, and after running two seasons do not find any part worn in the least.

Very truly yours,

F. H. WOLKE.

Toledo, O., Nov. 11, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: The D 5½ H.P. engine No. 3721 which I bought from you over two years ago has and is giving perfect satisfaction to-day. I installed it in a launch 25 ft. by 6 ft. beam in place of a 12 H.P. twin cylinder engine which was stolen out of my launch. I find the 5½ H.P. engine drives her along just as fast, and I am never looking for trouble as I used to.

Very truly yours,

HENRY ALEXANDER.

Bryn Mawr, Washington, Dec. 2, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: The Model "O" Marine Engine I bought from you several years ago has been giving perfect satisfaction. Never any trouble whatever. Has not cost a cent of repairs in that time.

Very truly yours,

HARRY W. TAYLOR.

Berlin, Md., Nov. 19, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: The Model 2C 12 H.P. engine has given me excellent service. I have it installed in a 32' cruiser and it turns a 20" x 20" Hyde Wheel 600 R.P.M. The engine starts easily and gives me more power than I had expected.

Very truly yours,

COLBY CURTISS.

Bangor, Me., Dec. 6, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: With regard to the service being given me by your model 2K Engine, I beg to state that I cannot sufficiently express to you the good service that your engine is giving me. It is all that you claim it to be. This engine has been running satisfactorily from the time I received it, never given me any trouble whatever, no break-down, consequently no repairs whatever have been done to the engine. To tell you that the Pistons are O.K. and do not need over-looking or repacking, she loses no compression, is sufficient proof that your Engines, or I may say this Engine in question, has been made of the very best material for the condition and good working order in which it stands.

Very truly yours,

LOUIS G. MCINTOSH.

Balboa, Canal Zone, Nov. 22, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: I installed the Model 2-0 12 H.P. high-speed Eagle in a Hand V-bottom boat 25' x 6' x 1' 10", turning a 17 x 20 Hyde, but after engine had been used and smoothed up, I found an 18 x 22 Hyde gave me fully 10 miles an hour. I have only a good word for entire outfit, not the least bit of trouble since March up to the present time, as now I am hauling out for the winter. I found nothing here but what I could beat badly. I was up against two of your 12 H.P. EAGLE (600) Engines in work hulls, but they move as easy as the 14 H.P. —, 10 H.P. — and others, but they all took a back seat. I was up against two — 12-16 4-cycle in — boats, but I was too much for them. I have no photo, but you can see No. 320 in Hand book of his boat (W. H. Hand, New Bedford, Mass.), which is the boat Engine is in.

Very truly yours,

C. S. TRAIN.

Chatham, Mass., Oct. 29, 1915.

THE STANDARD CO., Torrington, Ct.

Gentlemen: I take great pleasure in saying that your model R 6 H.P. engine has given me excellent service for fully two years and is doing fine yet. It's running just like a clock, never had missed one revolution and it has run steady for a whole day a good many times. Being a fisherman, I need an engine of that kind. When one goes out in the ocean for 20 or 30 miles he has to have a good engine to be safe, and that is just what I have. I highly recommend it to anybody who is looking for smooth, steady running motor.

Very truly yours,

JOHN RYBOVITCH.

West Palm Beach, Fla., 12/22/15.

Eagle

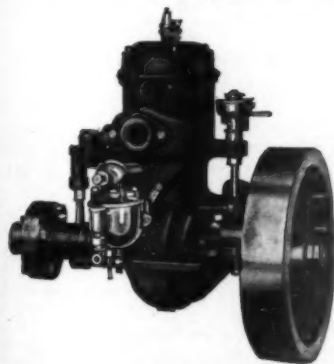


MARINE ENGINES

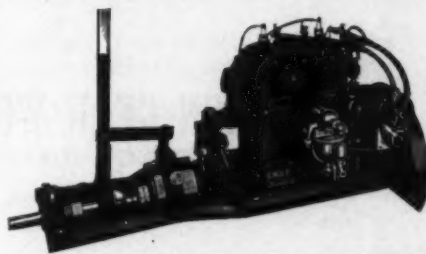
The popular priced line with excess power and excess value. You never had, and never will, purchase better value for your money than that offered you in every "EAGLE" Engine.

DO NOT PROCRASTINATE

1916 promises to demand more engines than there are facilities to produce. Manufacturers cannot purchase raw materials and deliver goods as promptly as in the past. There has been an evolution in business, resulting from enormous demands for all kinds of products, with the result that to go in the market today and attempt to secure supplies is almost impossible. Therefore, arrange for your engine requirements *early*, and be sure to arrange with a manufacturer who is likely to render you satisfactory service. You will find it more important than ever this year to use discrimination as to your source of supply.



It appears almost useless for us after 17 years of continuous national advertising and with a business record unsurpassed, to place our merits before you for consideration at this time, nevertheless there are a few of the better class dealers that we feel should be associated with us and selling the most complete and up-to-date line of 2-cycle engines on the market.



We have a large and varied line to choose from. Our popular-priced high-speed Models have no competition. They are in a class by themselves. They hold all records for speed and horsepower development and their construction is of surpassing quality.

Our Medium-Speed line of Engines is too well known to require any special mention. They have been a standard for 8 years, and the durability of this line is known all over the world, having shipped them to practically all foreign countries.

The Heavy Duty "EAGLE" Engine, for work boats and auxiliary purposes, cannot be improved upon. There are engines of this type in service that have been used continuously for 16 years, which is sufficient evidence of their value.

Therefore, we address ourselves to the live dealer, to the dealer who has an established business, who is sufficiently alert to grasp the importance of representing an established popular line and who realizes the importance and value of an association with an established house.

THE STANDARD CO., TORRINGTON, CONNECTICUT

PARAGON REVERSE GEARS

HAVE a *clean* boat this season. This enclosed model of the well-known Paragon is the first step toward freedom from flying oil and grease. Every part is enclosed and the top of the housing may be removed in a few seconds.

Ask to have your new motor equipped with this enclosed Paragon or ask our nearest agent to suggest the proper size for that boat of yours.

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EVANS STAMPING & PLATING CO.
Cushman Street Taunton, Mass.

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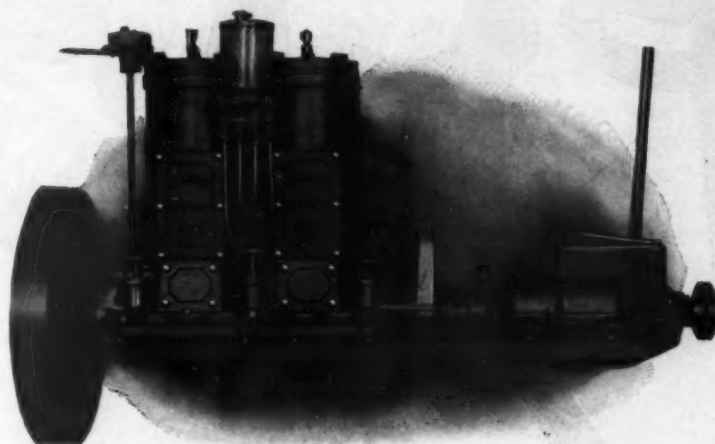
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\$150. 12 to 15 H. P. Smalley \$150.

The First True Marine Engine of Proven Quality That Has Been
Placed On the Market At a Popular Price

We have been in the marine engine game for the past TWENTY YEARS and it is well to bear in mind that we have NEVER changed the general principle of our engine. Where other manufacturers have failed, the SMALLEY HAS STOOD THE TEST



12-15 H.P.

Engine can be run on either Gasolene or Kerosene
Kerosene attachment, \$10.00 extra

The SMALLEY is the only two-cycle engine on the market with GUARANTEED FUEL ECONOMY AND FLEXIBILITY.

Our perfect NON-Backfiring and pre-heating device eliminates all backfiring, saves fuel and makes engine much more flexible.

Warning: Don't buy the discarded engines with which the auto and cycle car manufacturers have flooded the market. Where are you going to get repair parts? Have you noticed the small bore and stroke of these engines? Will they swing a propeller large enough to give satisfaction in your boat? Is the H.P. rating based on 650 to 900 R.P.M., like the SMALLEY, or is it based on 1500 to 2000 R.P.M.? These are the points that you want to consider.

A comparison that is worthy of your careful consideration

Why buy a four-cylinder, four-cycle engine when you can get all the advantages of this type of engine in the SMALLEY two-cycle, together with the great advantages of this type?

Four-Cylinder, Four-Cycle	Smalley	Four-Cylinder, Four-Cycle	Smalley
8 valves to grind.....	None	4 piston pins.....	2
8 valve guides to wear.....	None	4 piston pin bearings.....	2
8 valves to break.....	None	4 Spark plugs to buy.....	2
8 valve pockets to hold burnt gases.....	None	4 lots of wire to give trouble.....	2
8 valve springs to wear out.....	None	4 cast en-bloc cylinders to throw away when one gives out.....	Cast separate
1 cam shaft to keep up.....	None	Entire engine to dismantle when one piston is removed to clean.....	Removable cylinder heads
1 set cam shaft gears.....	None	Chance of boat burning on account of backfiring.....	Non-backfiring
8 push rods to repair.....	None		
16 piston rings to keep up.....	8		
4 crank pin bearings to wear.....	2		

Your common sense will tell you which of these engines will last the longest and also which one is the cheapest to repair

AGENTS:

We have some good territory still open. Now is the time to sign up with us. You will get our co-operation in selling the *season's greatest bargain*. Write for agency application.

Write TODAY for catalog, describing our wonderful bargain.

SMALLEY-GENERAL COMPANY

1603 Trumbull Street

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Bay City, Michigan



\$460

Standard Type. Iron base and crank case, for heavy and medium duty work, speed 200 to 900 R.P.M.

\$550

High Speed Type. Aluminum base and crank case, for fast launches and hydroplanes, speed 200 to 1500 R.P.M.

Price includes Magneto, Joe's Reverse Gear and all usual motor equipment

To the undisputed Erd Quality we have added the undisputed superiority of Valve-in-Head design. And by producing these motors in the quantities warranted by the long standing Erd demand we have been able to reduce the manufacturing cost to a point which permits the exceptionally low prices quoted above. If exact figures were obtainable, we believe this particular Erd model would be found the most popular marine motor of its size and type on the market.

We have been building Erd Quality Marine Motors for seventeen years. When we built two-cycle motors exclusively these Erd motors were known to be among the fastest, sturdiest and most satisfactory two-stroke motors made. We still make these two-cycle motors in Standard and Featherweight types, and sell great numbers without even advertising them, so great is the value of their past reputation. Many a race has been won by these Erd motors.

When we introduced our first 4-cycle motors of the L-head type, their clean cut lines, great fuel economy and steady power quickly built up a ready sale for them. Not satisfied to rest on this success we proceeded to adopt and adapt the many advantages of Valve-in-Head construction for these motors. After a season of wide general use we do not see where there is room for improvement. But when we discover such a possibility it will be immediately worked out and offered to our large clientele of Erd patrons.

Tell us about your boat, what speed you want and let us submit a proposition that will interest you.

ERD MOTOR COMPANY, Saginaw, W. S., Michigan, U. S. A.

30 Pyrenes Protect This Splendid Boat

Short circuits, back fires from carbureter and all other causes of bad engine fires have no terror for E. F. Albee's "Beaumere."

Why?

She carries Pyrene.

Pyrene kills gasoline or oil fires quickly.

It is the only absolute safeguard against the motor boat fire peril, where water is worse than useless.

Pyrene does not corrode. Does not damage. Always ready. \$7.50, complete with bracket.

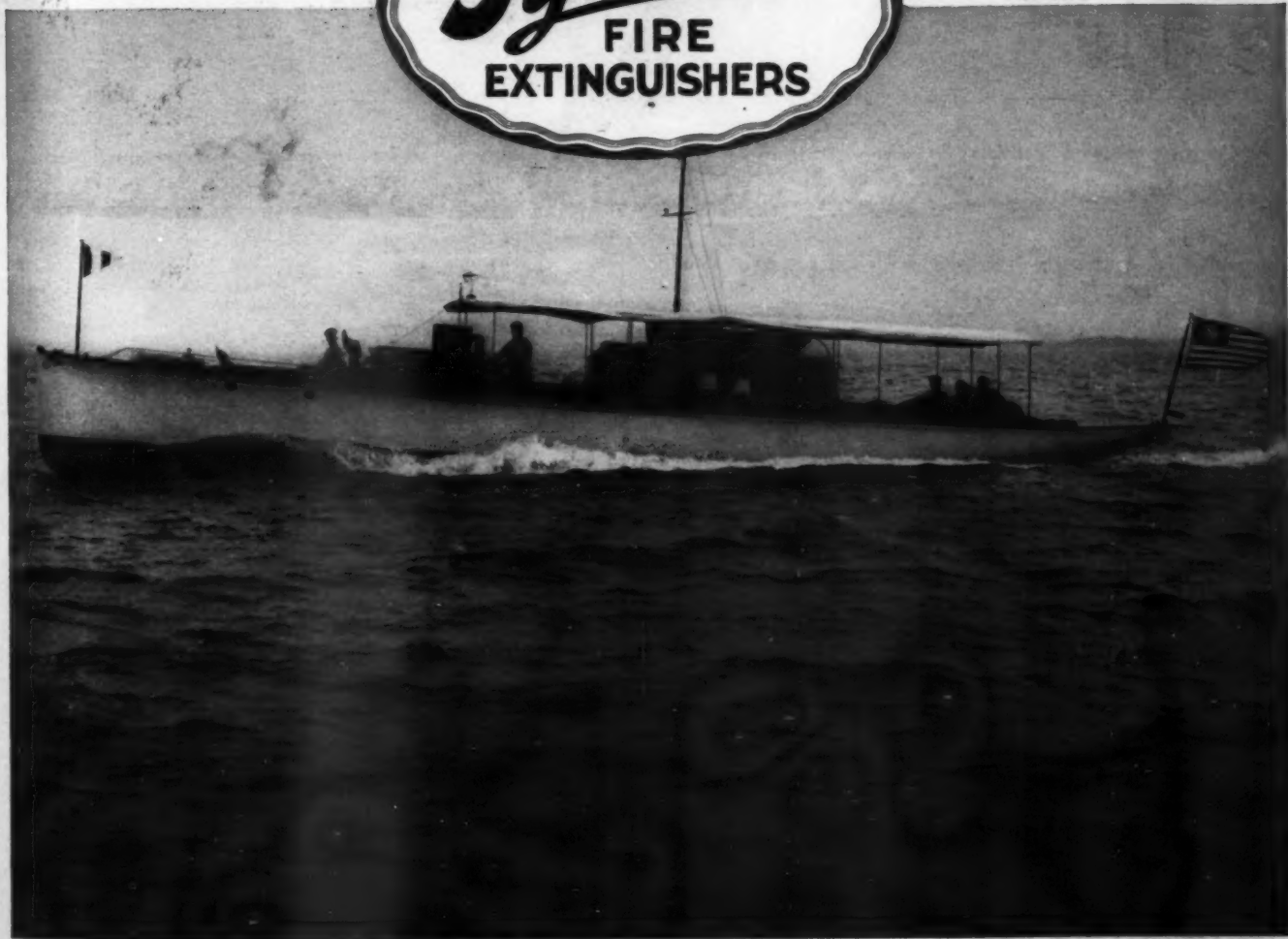
Approved by the U. S. Steamboat Inspection Service

Sold by marine, auto supply and hardware dealers

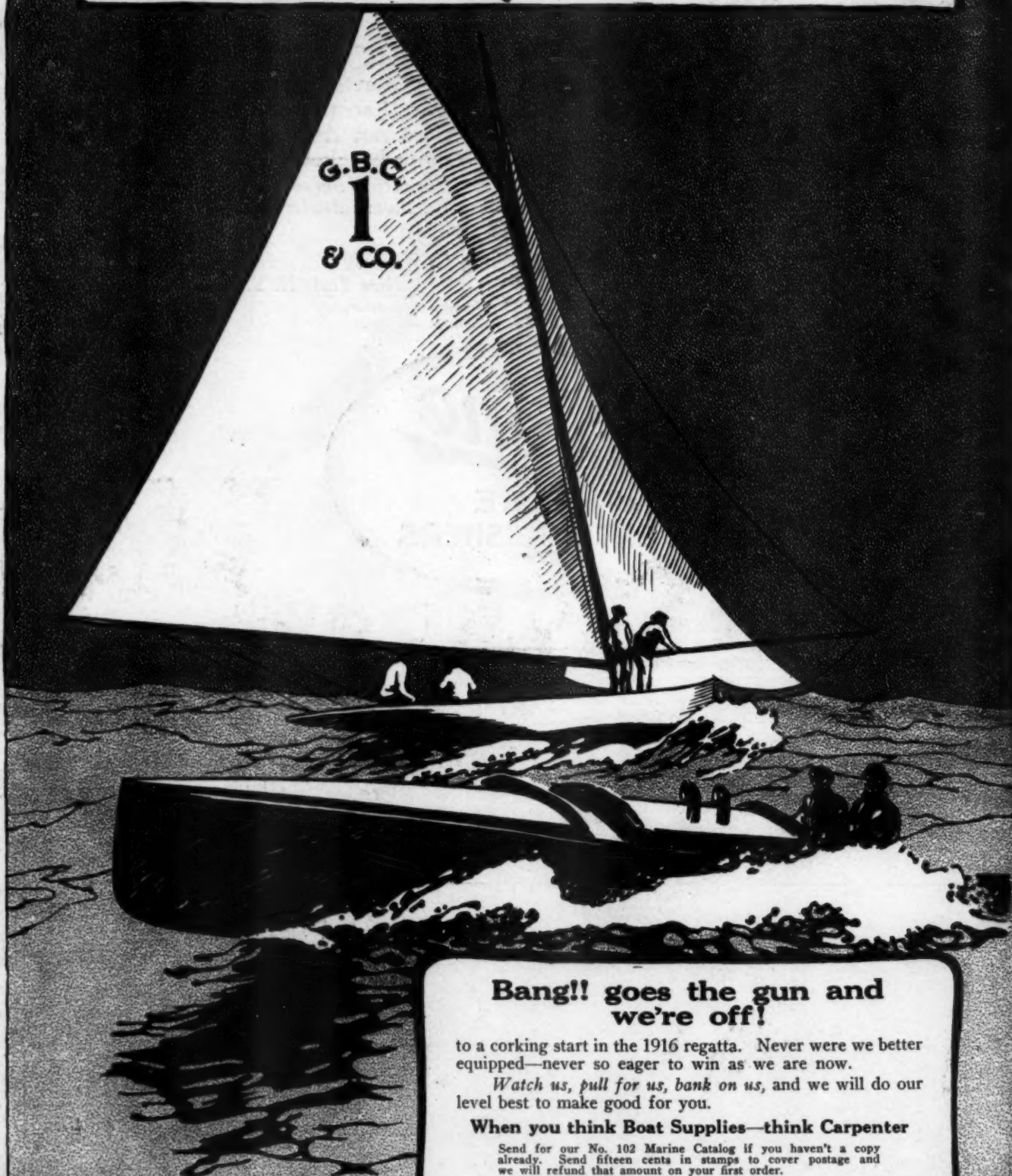
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Pyrene Manufacturing Company
142 Vanderbilt Avenue New York, N. Y.

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There's Safety Afloat with Pyrene in the Boat



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**Bang!! goes the gun and
we're off!**

to a corking start in the 1916 regatta. Never were we better equipped—never so eager to win as we are now.

Watch us, pull for us, bank on us, and we will do our level best to make good for you.

When you think Boat Supplies—think Carpenter

Send for our No. 102 Marine Catalog if you haven't a copy already. Send fifteen cents in stamps to cover postage and we will refund that amount on your first order.

New 1916 net price list ready about April 1st.

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Power Insurance

A power boat that's short on power isn't going to satisfy you.

To be able to go anywhere you want to—and when. To know you can count at any time on all the speed and power your motor delivered when it was new—that's the only way for the true motor boat lover to enjoy his craft.

Insure your power supply by installing a set of

McQUAY-**LEAK-PROOF**NORRIS PISTON RINGS

They will give you strong, steady, sturdy, dependable motor service. They stop compression leakage—save fuel and oil—reduce carbon trouble.

All good supply houses, repair shops and marine stores have them in stock.

Send for FREE Booklet—"To Have and to Hold Power"—the standard hand-book on gas engine compression. It tells what **Leak-Proof** efficiency means. Write Dept. B.

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Make your boat shipshape, comfortable and safe

Many a boat has been praised for its beauty and comfort, largely because she was fitted up with good hardware. "It's the little things that count"—good fixtures make a boat, just as poor ones mar it.

That is why thousands of motor boatmen and yachtsmen equip their craft with **W** MARINE HARDWARE. It insures a trim-looking, as well as a *comfortable* and *dependable* boat.

W on Marine Hardware has stood for certain satisfaction in every particular, for sixty-nine years. It means long wear, economy, and the elimination of the many troubles and inconveniences that are connected with cheap material.

W Marine Hardware

We show on this page, a few of the thousands of articles carrying "The Mark of Quality"—**W**. The line includes:

ANCHORS	CAPSTANS
STEERING WHEELS	CABLE CHAINS
DECK PLATES	COMPASSES
PORT LIGHTS	ROWLOCKS
BILGE PUMPS	BOAT NAILS
STUFFING BOXES	"NOSLACK" STEERING WHEEL

We are also sole manufacturers of THE MAXIM SILENCER FOR MOTOR BOATS. A *Silencer* and not a muffler. Cuts out noise without cutting down speed.



W goods are the best obtainable in quality of material and workmanship. They are sold by dealers everywhere—look for the trade-mark **W**.

A Useful Book for You

Our new 112-page book, "Sea Craft Suggestions and Supplies," is full of information for motor boat owners or yachtsmen. Hints and tables that make it a valuable reference book. Send 10c and a copy will be sent promptly. *Write now.* We will include "Compass Talk and Tests" free.

WILCOX, CRITTENDEN & COMPANY, INC.

Established 1847

4 South Main Street

Middletown, Conn.

World's Largest Manufacturers of Marine Hardware

MAXIM SILENCER

Kyanize

KY-AN-IZE

There's a great navy of Kyanize boats and hundreds added to the fleet every year—because owners and boat builders have discovered that Kyanize has the quality and is *right* for the hard service of salt and fresh water, sun, wind, rain and any conditions of climate. A Kyanize Boat is always new, always smart, spick and span.

Kyanize Spar Finish

is the motor boat Varnish. It will not crack, soften or check. Dries hard as steel. It will not turn white or blue, either in or out of salt or fresh water. Withstands any climatic condition and guaranteed. Thousands of gallons used in the U. S. Navy. And we stand back of every gallon. Just try it.

Kyanize White Enamel

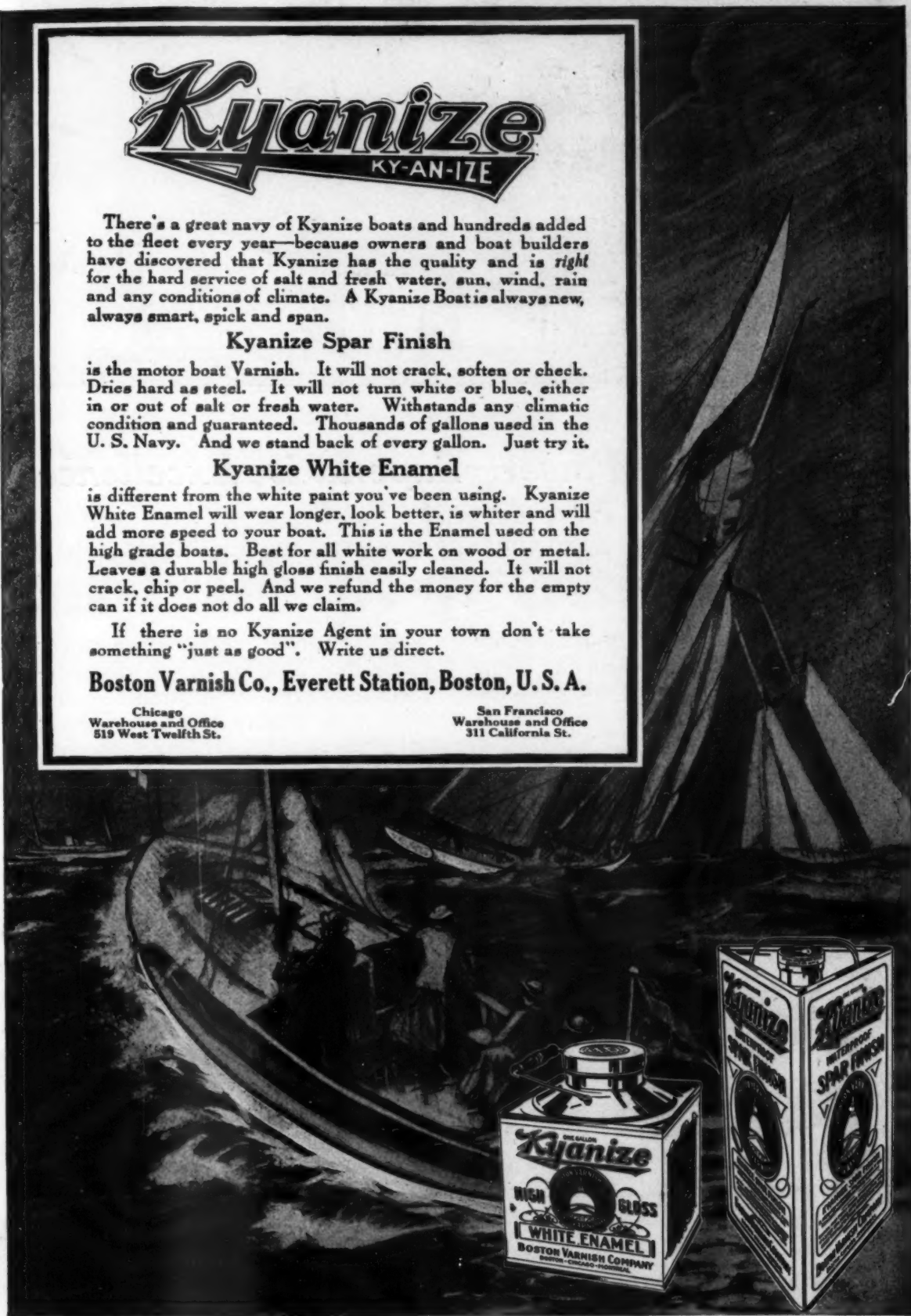
is different from the white paint you've been using. Kyanize White Enamel will wear longer, look better, is whiter and will add more speed to your boat. This is the Enamel used on the high grade boats. Best for all white work on wood or metal. Leaves a durable high gloss finish easily cleaned. It will not crack, chip or peel. And we refund the money for the empty can if it does not do all we claim.

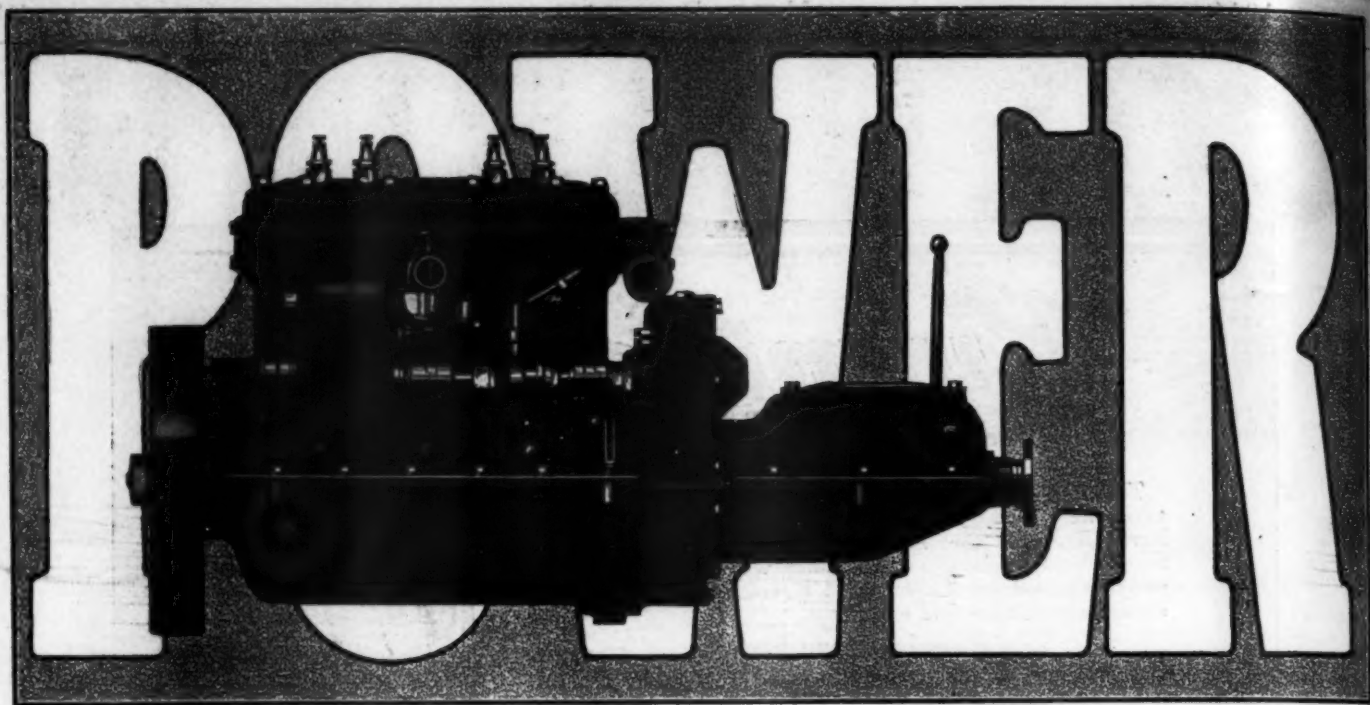
If there is no Kyanize Agent in your town don't take something "just as good". Write us direct.

Boston Varnish Co., Everett Station, Boston, U. S. A.

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Warehouse and Office
519 West Twelfth St.

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Warehouse and Office
311 California St.





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Tremendous Power—Superlative Excellence

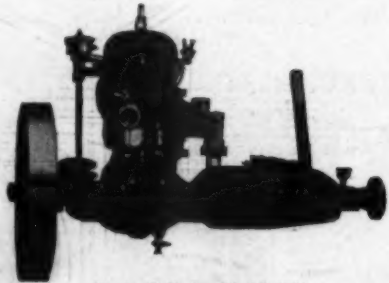
These are the predominating features in the latest Gray creation—the new model “D Jr.”—the super-speed engine.

The “D Junior” is unquestionably the highest achievement in four-cycle marine motor design—the most powerful little brute of a 4-cycle engine ever put on the market to sell at a moderate price—surpassing all earlier results in mechanical and thermal efficiency.

12-15 H. P. 4 Cylinder 4 Cycle \$198.00 UP

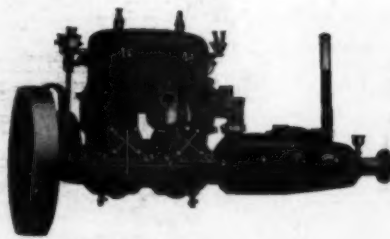
The “D Junior” shows more power per cubic inch of piston displacement than ever before attained—and with it all, quality of a new degree; entire absence of vibration; elimination of all unnecessary noise; responsiveness and control that give a new sense of motor comfort.

There's a Gray for Every Boat



Single Cylinder Model “U”
Manufactured in two sizes
3 H. P. and 5 1/4 H. P.

Complete
Line
2 Cycle
and 4 Cycle
Motors
3 to 90
H. P.



Double Cylinder Model “U”
Manufactured in two sizes
6 H. P. and 11 H. P.

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GRAY MOTOR CO., 474 GRAY MOTOR BLDG. Detroit, Mich.

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Advertising Index will be found on page 43.

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THE RIGHT WHEEL FOR ANY TYPE OF BOAT

The right wheel must have the right **BLADE SURFACE**. The **Columbian** is the only complete line with **EVERY REQUIRED BLADE SURFACE**

THE UNITED STATES GOVERNMENT OFFICIALS KNOW THIS
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THE MOST PROMINENT NAVAL ARCHITECTS KNOW THIS
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That is one reason why they

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PEERLESS PROPELLERS

Meet the demand for lower prices.

Made in Rocket, Arrow, Reliance and Ailsa-Craig Types.

They do not carry the **Columbian Trade Mark**, but they are guaranteed sound, and are accurate as to pitch.

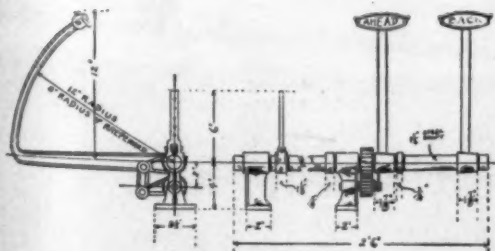
We consider them better in design, material and workmanship than most advertised **HIGH GRADE** propellers.

Ask for Peerless Price List.

Every genuine **Columbian Propeller** carries this Trade Mark



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**COLUMBIAN
FOOT REVERSE CONTROL**
Operate your reverse gear with your foot.
COLUMBIAN UNIVERSAL STRUTS
Are the Best at Prices No Higher

Rudders of All Types.
50 Different Patterns.

We have something special for your boat.



**UNIVERSAL
STRUTS
SELF ALIGNING.**

A SPLITDORF Plug after years of Service

A MOTOR boatman at Lake Hopatcong, N. J., regretfully parted with this plug in exchange for a new one after stating that he had had it in his motor for several years, and that it had given him *unfailing service for thousands of miles of strenuous work.*

Moreover, he added, it was as good as new so far as service was concerned—he *knew* what it would do and he *knew* that it would answer his purposes for *many more years.* His confidence in

SPLITDORF SPARK PLUGS

was absolute and unshakeable—no other could give him the service his work required—he could always depend upon the SPLITDORF with the green hexagonal jacket—the SPLITDORF *never failed him.* This particular style of plug has been discontinued in manufacture for many years, but its more modern brothers have even greater gas-proof, 'soot-proof, non-fouling, easier-cleaning qualities than the old very serviceable type.

Take the tip from the Lake Hopatcong motor boatman and insist upon using SPLITDORF SPARK PLUGS

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ATLANTA	10-12 E. Harris Street	NEWARK	278-80 Halsey Street
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THEY STAND THE QUALITY TEST! Construction, equipment and operation finest in the world. Economical installation. First cost reasonable. Long efficient service with minimum repair expense. **GUARANTEED WITHOUT RESERVE.**

CAN MAKE IMMEDIATE SHIPMENT FROM STOCK



"National"—Plate S-2010

(Patented—Copyrighted.)
The "National" Pump Water Closet has extra heavy Vitro-Adamant Oval Flushing rim Pedestal bowl fitted with 3" combined supply and waste pump. Complete with Oak seat and cover. Pump rough. \$132.50
N. P. trimmings



"Huron"—Plate S-2035

(Patented—Copyrighted.)
The "Huron" Pump Water Closet has new style extra heavy Vitro-Adamant Flushing rim hopper bowl. 5" combined supply and waste pump. Complete with Oak seat and cover. Pump rough. \$120.50
N. P. trimmings



"Florida"—Plate S-2015

(Patented—Copyrighted.)
The "Florida" Pump Water Closet with extra heavy oval Pedestal Vitro-Adamant Bowl. 4" combined supply and waste pump with check valve in waste arm. Complete with oak seat and cover pump rough with finished trimmings \$100.00



"Iowa"—Plate S-2040

(Patented—Copyrighted.)
The "Iowa" Pump Water Closet. Vitro-Adamant extra heavy oval hopper bowl. 4" supply and waste pump. Price with oak seat and cover, pump rough with polished \$85.00
trimmings



"Mohawk Improved"—Plate S-2030

(Patented—Copyrighted.)
The "Mohawk Improved" Pump Water Closet, extra heavy Vitro-Adamant oval Flushing rim hopper bowl. Composition supply and waste pump. 3" cylinder. Pump rough with polished trimmings, oak seat and cover \$70.00



The "Frisco"—Plate S-2046

(Patented—Copyrighted.)
The "Frisco" Pump Water Closet, extra heavy Vitro-Adamant Oval Hopper Bowl. 3" supply and waste pump. All metal parts smoothed.

Plate S-2045 Polished oak seat, no cover \$59.00

Plate S-2046 Polished oak seat with cover 60.00

Dimensions: Width, 34"; front to back, 22"; height, 17 1/2". Weight: Net, 80 lbs.; shipping, 120 lbs.



Plate S-126

The "Gleaners" Competition Flat Way Sea Cock.

	Price
3/4 inch	\$2.25
1 inch	3.00
1 1/2 inch	5.25
2 inch	6.00

Sizes 2 1/2 inch and 3 inch also made.



"Knockabout"—Plate S-34

(Patented—Copyrighted.)

The "Knockabout" Improved Pump Water Closet, Vitro-Adamant round Flushing rim Bowl. 2 1/2" combined supply and waste pump. Patent Automatic Safety Supply Foot Valve, and "Sands" Patent Back-water Check Valve.

Pump rough, finished trimmings, oak seat and cover. Mahogany seat and cover, \$49.00 1.50

Weight: Net, 45 lbs.; Gross, 75 lbs.



Plate S-127

The "Grandby" Round Way Sea Cock. For large class.

	Price
1 inch	\$4.00
1 1/2 inch	5.50
2 inch	7.00
2 1/2 inch	11.00

Sizes 2 1/2" and 3" also made.

Small Vitro-Adamant Corner Lavatory only 12" on side, with Nickel-Plated Plug. Stopper Chain and Stay. Nickel-Plated Faucet. \$26.50

Pump complete as described, \$26.50

Plate S-3381



"Winner"—Plate S-2061

(Patented—Copyrighted.)

The "Winner" Pump Water Closet, Vitro-Adamant Round Hopper Bowl, oak seat, N. P. brass hinges, 2 1/2" supply and waste pump, "Sands" Special quick opening supply valve.

Plate S-2060 Fixture as described with oak seat. \$19.00

Plate S-2061 Fixture as shown with oak seat and cover 20.00



Plate S-150

The "Gleewood" Folding Lavatory, with Vitro-Adamant oval basin, N. P. brass basin, N. P. copper lining, N. P. soap and brush holder and N. P. trimmings. \$42.50

Polished oak, polished finish. \$44.00

Plate S-152

"Gleewood" Folding Lavatory, same as Plate S-150, except with faucet for pressure or gravity supply.

Polished oak, polished finish. \$37.50

Polished oak, polished finish. \$39.00

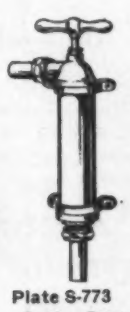


Plate S-773

Rough Brass Reversible Pump for Gleewood, special valves, 2 inch cylinder, length 12 inches. Price \$10.50



Plate S-4280

New Pattern Improved All Brass Galleys Pump, 2 inch cylinder, with shut-off cock. \$12.50

Pol. Brass \$12.50

Pol. & N. P. 14.00



Plate S-3180

The "Monard" Lavatory, same as Plate S-3183, except with faucet, instead of Pump and with N. P. Full "S" Trap \$13.25

Pol. Brass \$13.25

Pol. & N. P. 16.50



Plate S-709

All Brass Galleys Pump, 1 1/2 in. Cylinder, reversible handle with shut-off cock. \$8.50

Polished \$8.50

N. P. all over \$16.50



Plate S-4300

Sands New Volume Blige Pump, 2 in. Brass Cylinder 28 in. long. Price \$4.30

Plate S-4301

Same as described, but also fitted with adjustable foot rest. Price \$3.00



Plate S-145

The "Hebron" Vitro-Adamant Folding Lavatory, N. P. brass combination self-closing faucet for hot and cold water. \$42.50

Weight: Net, 45 lbs.; Gross, 75 lbs. Dimensions: Height over all, 28 1/2 in.; width, 16 1/2 in.; depth open, 17 in.; depth closed, 7 in.

Plate S-147

The "Hebron" Lavatory, similar to above except fitted with pump instead of faucet \$47.50



Plate 13034-B

Cast Bronze Round Raised Flange. \$0.35

50 \$1.00

100 \$1.50

200 \$2.25

300 \$3.00

Plate S-5210

"Sands" Polished Bronze Fender Hooks, with screws for 1/4 in. rope. Price per doz. \$2.50

Plate S-750

Double Acting Brass Auto Blige Pump, 18 inches long under upset and fitted with 5 feet of rubber hose. No. 1—1 1/2" diam. \$3.00

No. 2—1 1/2" diam. 4.50

No. 3—1 1/2" diam. 24" long, with foot rest, \$5.50

Plate S-5202

Universal Polished Brass Rope Lead. Swing joint permits different angles of Pull—prevents binding of rope.

1/4 inch \$0.35

3/8 inch \$0.50

1/2 inch \$0.75

Plate S-5200

Neptune Motor Boat Bow Lantern Bracket; hinges permit bracket to lie on deck when not in use. Polished Brass \$0.75

Plate S-1002

Round Composition Air Ports, with heavy frame and hinge. Diam. of Price

Opening Plain Opening Plain

8" \$10.75 11" \$17.50

12" \$13.50 12" \$20.00

16" \$14.50 14" \$25.00

Plate S-750-A

New Style Double-Acting Brass Blige Pump, with 5-ft. discharge and suction hose. No. 1—1 1/2" diam., 18" long \$8.50

No. 2—1 1/2" diam., 18" long \$8.50

No. 3—2" diam., 24" long \$14.50

1 1/2 inch \$3.75

1 inch \$2.50

Plate S-130

The "Alton" Brass Inlet Connection. Iron Pipe.

1/4" \$1.00

3/8" \$1.25

1/2" \$1.50

3/4" \$1.75

1" \$2.25

1 1/2" \$2.75

2" \$3.75

2 1/2" \$4.50

3" \$5.50

3 1/2" \$6.50

4" \$7.50

4 1/2" \$8.50

5" \$9.50

5 1/2" \$10.50

6" \$11.50

6 1/2" \$12.50

7" \$13.50

7 1/2" \$14.50

8" \$15.50

8 1/2" \$16.50

9" \$17.50

9 1/2" \$18.50

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10 1/2" \$20.50

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11 1/2" \$22.50

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25 1/2" \$50.50

26" \$51.50

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27 1/2" \$54.50

28" \$55.50

28 1/2" \$56.50

29" \$57.50

29 1/2" \$58.50

30" \$59.50

30 1/2" \$60.50

31" \$61.50

31 1/2" \$62.50

32" \$63.50

32 1/2" \$64.50

33" \$65.50

33 1/2" \$66.50

34" \$67.50

34 1/2" \$68.50

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36" \$71.50

36 1/2" \$72.50

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37 1/2" \$74.50

38" \$75.50

38 1/2" \$76.50

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39 1/2" \$78.50

40" \$79.50

40 1/2" \$80.50

41" \$81.50

41 1/2" \$82.50

42" \$83.50

42 1/2" \$84.50

43" \$85.50

43 1/2" \$86.50

44" \$87.50

44 1/2" \$88.50

45" \$89.50

45 1/2" \$90.50

46" \$91.50

46 1/2" \$92.50

47" \$93.50

47 1/2" \$94.50

48" \$95.50

48 1/2" \$96.50

49" \$97.50

49 1/2" \$98.50

50" \$99.50

50 1/2" \$100.50

51" \$101.50

51 1/2" \$102.50

52" \$103.50</



"Isn't She A Pippin?"

**"Built Her Myself
and saved $\frac{2}{3}$ the cost
by the
BROOKS
SYSTEM"**

YOU'LL enjoy your boat ten times as much if you build it yourself. Besides the pride of ownership there will be the joy of creating something, watching it grow step by step. It will be a living personal thing to you, not merely a piece of property which anyone with the price can buy.

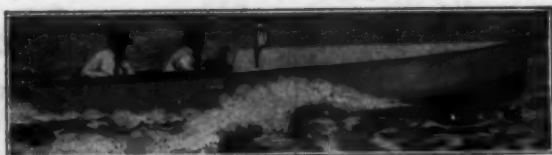
If you build your boat by the Brooks System it will be an outfit you can brag about, too. It will be up-to-date in design, thoroughly workmanlike in construction, and as staunch and seaworthy as any factory built boat of its type. And your money will go three times as far.

The Brooks System was the original pattern and knock-down system of boat building—started in 1901. Over sixty thousand Brooks Boats have been built. Any man or boy who can handle a saw, hammer or plane can build a successful boat by this method.

**Start At Once So As to Get the
Full Season's Enjoyment**

Builder Agents Wanted. Write us today for full information. You'll enjoy the handsome Brooks Boat Book, whether you build or not. Over 100 models. Cruisers, Launches, Sail Boats, Rowboats and Canoes.

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6304 Rust Avenue, Saginaw, Mich.

Lowest-Priced Boat in the World For Inboard or Outboard Motor

\$25.00

15-Footer

Buys this complete knock-down boat, oak frame, clear cypress planking, cut to shape and fitted. All hardware included. Finished boat painted and varnished, ready for the water.....\$45

These 15-footers are also of the semi-V-bottom type. The model is designed especially for outboard motor, eliminating the defects of the ordinary rowboat. It has an extra strong reinforced stern.

With a light inboard motor installed it makes a "natty" and serviceable runabout. Just the thing for resorts and liveries. The prices quoted with either motor represent the greatest motor boat value ever offered.

Without motor it makes a first-class, all-around rowboat, light and roomy.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating. Advertising Index will be found on page 43.

Fastest Boat in the World Ten to Thirty-two Miles with Four to Twenty-five H. P.

\$45.00

17-Footer

Buys this complete knock-down boat (open cockpit), selected oak frame, clear cypress planking, decking and interior finish. Cut to shape and fitted, including hardware (everything except paint). Finished boat (open cockpit), painted and varnished, ready for the water.....\$95

With from 4 to 10 horse-power the 17-footer is a comfortable family launch, semi-V-bottom design, roomy, staunch and seaworthy. With 12 or more horse-power the boat becomes in effect a stepless hydroplane, which is the fastest model yet developed. The speed is limited only by the power and weight of motor used.

When motor is purchased with the finished boat it is installed and connected up ready to run.

Send for our catalogue giving full particulars.



Tripex Stern Light



American Automatic Fog Signal



Patterson Trap Ventilator



Pyro Alcohol Stove



Pyro Alcohol Stove With Tank



Crescent Yacht Range



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Durkee Pattern Port Light



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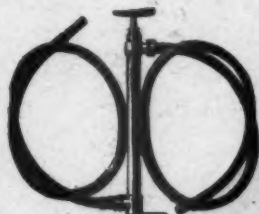
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Always Something New at Durkee's

WILL BE FOUND IN THEIR IMMENSE STOCK OF

HARDWARE FOR WET PLACES

WE FEATURE THE FOLLOWING THIS MONTH

THE DUNN DIVING HOOD
HAND'S SAFETY DRIP PAN

TJADER'S SPEEDOMETER
POTTER COURSE-FINDER

THE LITTLE HERCULES BILGE PUMP

For all of which circulars will be sent on application.

A TIMELY WORD TO MARINE HARDWARE DEALERS

The coming season is apt to be one of surprises.

You may be surprised at the high price of goods.

You may be surprised at a shortage in the supply of something which you very much need.

You may be surprised at the large demand for certain things of which you have not laid in a sufficient supply.

From the present outlook, which is one of constantly increasing business activity, one would be lead to anticipate a gradual stiffening up in prices; and this is what is actually taking place at the present time. How far the present movement will continue depends, of course, upon many circumstances.

Copper, Brass and Spelter jumped in price phenomenally many months ago. Iron Ore and Iron Products have also been advancing slowly for some time.

IT WOULD SEEM, THEREFORE, THE PART OF WISDOM TO PROVIDE AHEAD FOR ALL REASONABLE WANTS, AS YOU MAY SAVE LARGELY BY SO DOING.

CHAS. D. DURKEE & CO.

Incorporated

Manufacturers of MARINE HARDWARE and
MOTOR BOAT SPECIALTIES

2 and 3 South Street

NEW YORK CITY

FACTORIES:

Brass and Galvanized Goods - Grasmere, S. I., New York City
Machine Shops, Mop, Broom and Flag Factories - New York City

Our 1,100-page catalogue sent on receipt of 25 cents to cover delivery, or through your dealer free

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For Speed, Cruising or Working Boats—Correct Design—Highest Grade Material—Unexcelled Workmanship. Stop experimenting. Buy a HYDE and Secure RESULTS—

MADE OF HYDE MANGANESE BRONZE — GUARANTEED AGAINST BREAKAGE.

THE GALE PROPELLER

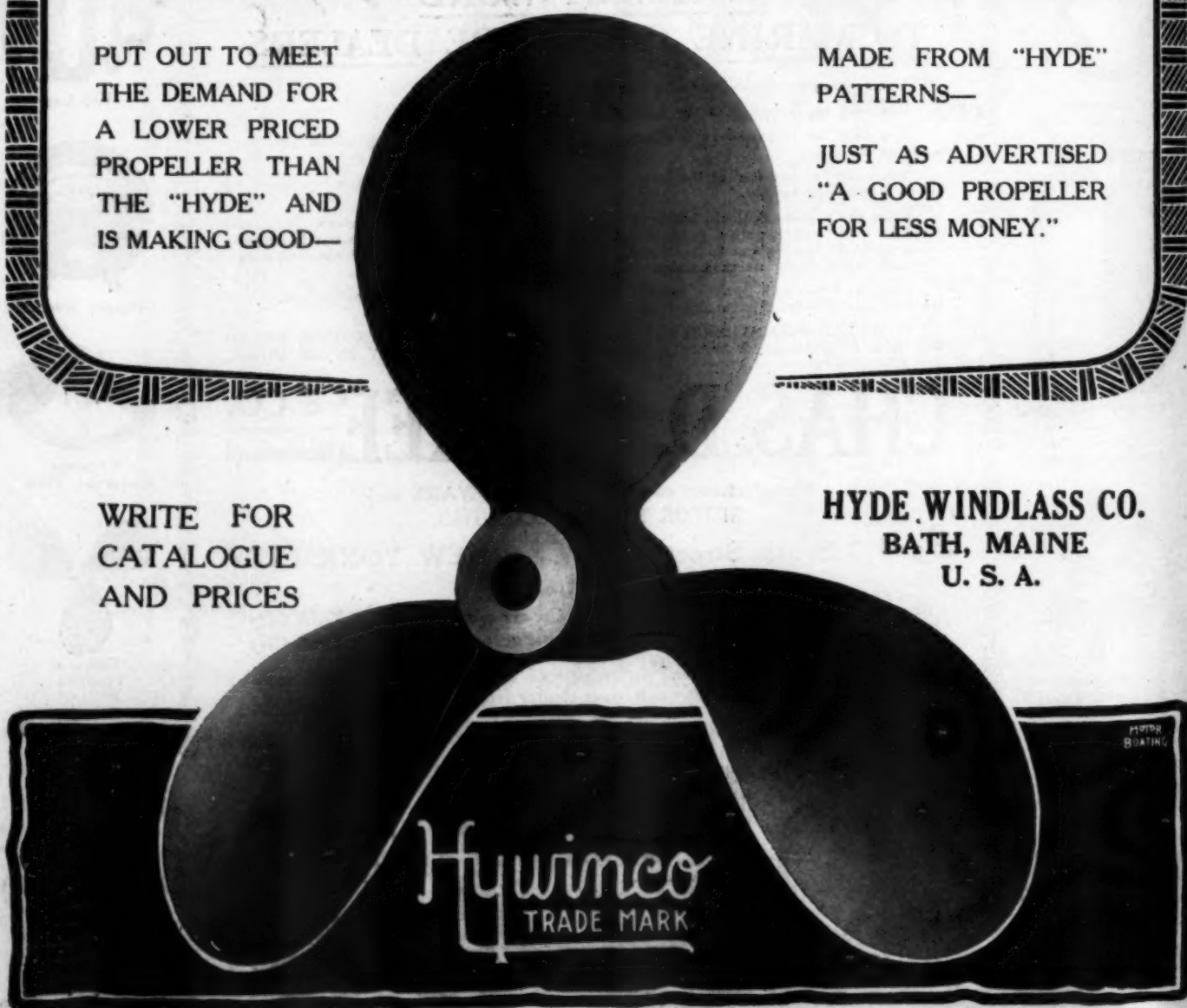
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THE DEMAND FOR
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THE "HYDE" AND
IS MAKING GOOD—

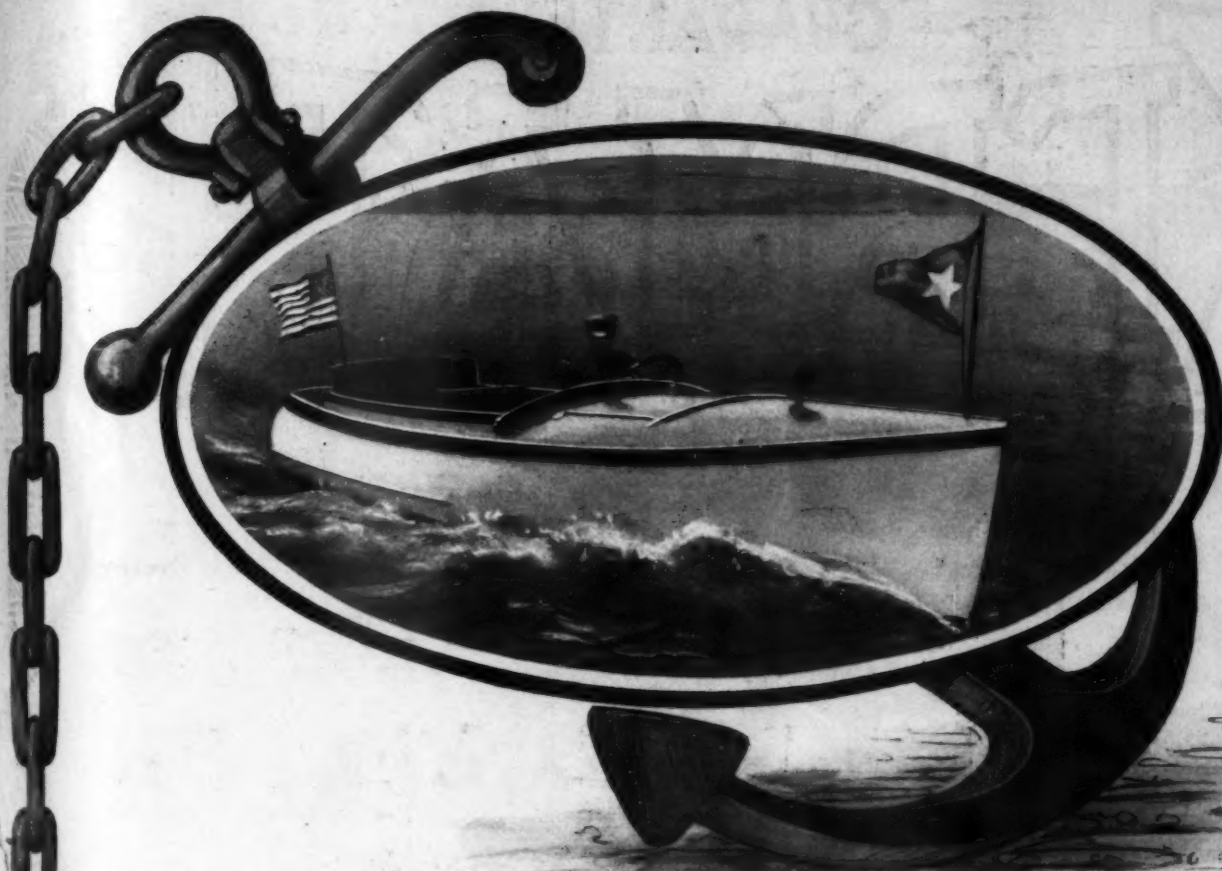
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"A GOOD PROPELLER
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HYDE WINDLASS CO.
BATH, MAINE
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"KATCHMEE"

Owned by Mr. Eben S. S. Keith, Sagamore, Mass.
President Keith Car & Mfg. Co.

Sagamore, Mass., October 22, 1915.

Fay & Bowen Engine Co.,
Geneva, N. Y.

Gentlemen:

Replying to your recent inquiry, under date of October 13th, would advise that the boat "Katchmee" recently purchased from you, gave us complete satisfaction. We have enjoyed an uninterrupted service the entire season and am pleased to state that the boat is all you claimed, both for speed and comfort.

The engine has power in abundance, and I am pleased to recommend same for ease of control. We are already looking forward to its continued use next year, when we expect to enjoy its many good points to the limit.

Believe me,

Very truly yours,

(signed) Eben S. S. Keith.

A Fay & Bowen 4-cylinder, 4-cycle, $3\frac{1}{2} \times 5$ engine furnishes "power in abundance" for "Katchmee." The small size of this engine insures real fuel economy. Yet there is power enough to drive this unusually roomy 25-ft., 11 x 5-ft. "family special runabout" 15 miles an hour. Bosch magneto, of course!

None Better Built!

Mr. Keith likes his boat so well he is only too glad to recommend it to you.

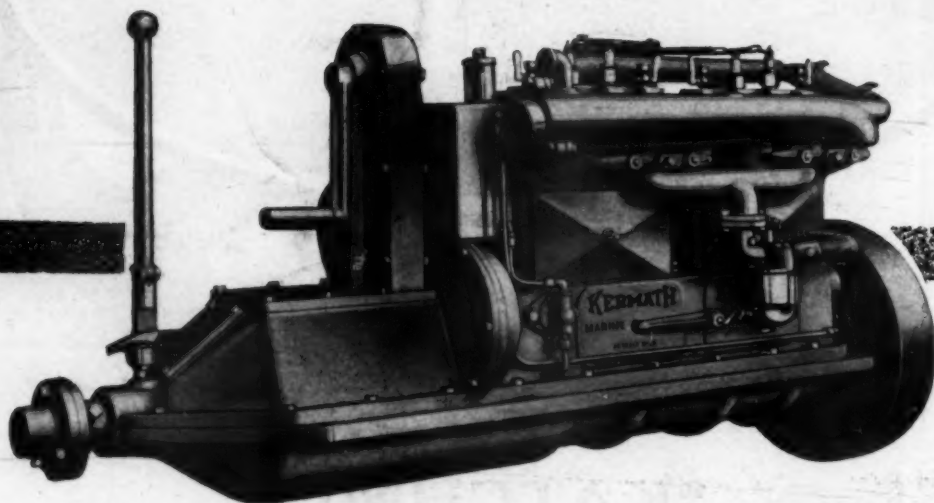
FAY & BOWEN ENGINE CO.

104 Lake Street, Geneva, N. Y., U. S. A.

Our engines are made for Canada by St. Lawrence Eng. Co., Ltd., Brockville, Ont.

KERMATH

GUARANTEED
MOTORS



The guarantee back of Kermath Motors is more than the conventional maker's promise to make good if his motor falls down. The real Kermath guarantee is the fact established by thousands of Kermath owners that the Kermath will stand up under every condition, no matter how severe.

Of course we stand back of Kermath Motors. But you don't want the kind of a motor which needs a backer. That won't help you out in emergencies.

The real Kermath guarantee gives that "Something Different" feeling that is not always secured in other motors. It is a feeling of positive security; a feeling of being safe out in rough weather; a feeling that your Kermath power plant senses and accepts its responsibilities.

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SOME ARE BETTER THAN OTHERS
"KERMATH ENGINES"
ARE OF THE BETTER KIND

12, 16 and 20 H.P., 4-Cycle, 4-Cylinder, Separate Engines or Unit Power Plants

\$195.00 and upwards

It's a pleasure to send our Catalog. We enjoy being of service to our patrons.

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Dept. No. 2, DETROIT, MICH.



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